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ABSTRACT

This report presents three interpretive manuscripts on preschool reading instruction for three audiences: the school administrator, the school teacher, and the parent. "Preschool Reading Instruction: Information for the Administrator" discusses the origins of preschool reading instruction, reviews the research dealing with preschool reading instruction, and presents information necessary for installing a preschool reading program. Similarly, "Preschool Reading Instruction: Information for the Teacher" presents a review of the literature on preschool reading instruction, along with suggestions and materials for teaching preschool reading. "Preschool Reading Instruction: Information for the Parent" provides answers to questions parents ask about preschool reading instruction and suggests guidelines parents might follow in helping the preschool child before he learns to read. (Author)

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VOLUME I OF III

PRESCHOOL READING INSTRUCTION: A LITERATURE SEARCH, EVALUATION, AND INTERPRETATION

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Bloomington, Indiana
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This section, so eagerly looked forward to as a sign of the culmination of a long effort, is, perhaps the most difficult to write. Moreover, when one has had the resources of one of the world's great universities available to him, coupled with the financial support afforded by a United States Office of Education grant, it is indeed difficult to sort out the numerous contributions to this report which certainly deserve a public expression of appreciation. Certainly, whatever merit this report possesses is due in large measure to the following:

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INTRODUCTION

This report is focused on preschool reading instruction for a number of reasons. First, increasing evidence attests to the fact that as early as the end of first grade great numbers of American children are found to be deficient in the basic skills, background experiences, and attitudes necessary for successful reading. Second, research indicates that there is a widening gap in the disadvantaged child's opportunity to successfully acquire reading skill. Third, increased pressure has been placed on educational systems to honor the "Right-to-Read" for every child in the decade of the 70's.

As might be expected, educators are emphasizing the preventive rather than the remedial aspects of reading instruction. Similarly, educators view early and continuous preschool reading instruction as a means to ameliorate the learning deficits prohibiting disadvantaged children's successful acquisition of reading skill. In other words, preschool reading instruction is viewed as a means of providing children with an early start in reading, thus avoiding early deficiencies in the skills and experiences necessary for successful reading and reducing the number of nonreaders and poor readers. This point of view necessitates that educators and lay groups concerned with implementing preschool reading instruction have a firm knowledge-base upon which to generate discussion and make decisions.

As a result of the above scene and the concentrated effort of the U.S. Office of Education, as well as many other governmental and private agencies and individuals, increasing numbers of preschool reading programs have been field tested. In other instances, researchers have explored the effects informal and formal preschool reading instruction.

Much data has been collected describing the characteristics of children receiving preschool reading instruction and evaluating their reading progress in later school years. It should be pointed out, however, that as yet no systematic, comprehensive efforts devoted to translating theory or research and research and development data dealing with preschool reading instruction for specific non-research audiences exist. This information is needed for non-research audiences to stimulate discussion and make decisions concerning preschool reading. Similarly, if preschool reading instruction is a means of bringing about effective educational change, i.e., reducing the number of nonreaders and poor readers, school administrators, teachers, and parents must be provided with a firm knowledge-base to determine answers to many crucial questions. Thus, this report's objective is to provide information on preschool reading instruction for three audiences: the school administrator, the school teacher, and the parent.

VOLUME I

PRESCHOOL READING INSTRUCTION: INFORMATION FOR THE ADMINISTRATOR

CHAPTER 1

ORIGINS OF PRESCHOOL READING INSTRUCTION

During the past decade, many school administrators have been faced with the problem of reassessing the emphasis placed upon the preschool education curriculum. As might be expected, one of the more controversial issues to be resolved has been the question of early reading instruction. As a result, the administrator has found himself in a perplexing, if not sometimes controversial, position: *He must decide whether to expose children to early reading instruction or to delay reading instruction until first grade*. Moreover, in more cases than not, he must justify his position to a public that is often equally divided on the issue of preschool reading instruction. For example, there are many educators who argue vigorously against preschool reading. Their colleagues, on the other hand, argue that reading instruction should be an integral part of the preschool curriculum. In the meantime, to the dismay of many preschool teachers, great numbers of parents are demanding that their preschoolers be exposed to reading instruction.

Regardless of the potency of arguments for or against preschool reading instruction, the school administrator must eventually resolve the issue by making a decision. No doubt, he will be called upon to justify his decision. Before he makes his decision, however, the administrator needs to be aware of the forces that have perpetuated current views toward the preschool curriculum.

Curriculum Change

Prior to 1956, the acceleration of academic achievement was not considered to be the goal of the preschool educational curriculum, although there were parents who wanted their children exposed to formal education early. The launching of Sputnik by the U.S.S.R., however, caused a near phobic reaction about making American intellect equal, if not superior, to its challengers in the race for space. Thus, the launching of Sputnik provided the impetus for the reappraisal of the American educational curriculum. Of major concern here, however, is the fact that the educational curriculum was not merely updated. New programs in the sciences were based on Bruner's contention that the schools of America were wasting precious time in postponing children to the content of many subject areas on the grounds that it was too difficult. Consequently, curriculum committees began to develop K-12 curriculum sequences instead of simply reappraising the curriculum.

Closely related to the above event is the idea that technological advancement is moving ahead at such a rapid rate that man's intellect in the next generation may not be able to cope with it. In short, man is in great danger of destroying himself with the technology he has created. Man must increase his intellectual abilities or be enslaved and annihilated by his own technological inventions.

More practically speaking, we are producing harvesting equipment faster than we are growing produce. We are producing a labor force for work which will never be performed by a hand operated tool. Thus, the economy of future generations is threatened. If there is an excess of unskilled labor, where will be tax monies to furnish the unemployed with the basic necessities of life come from? Certainly not the workers or the producers, unless we prepare them now. In other words, there is clear and eminent danger. The handwriting is on the wall: Provide the soon-to-be unemployed, unskilled labor force with the potential for higher intellectual performance. Then, a would be dependent population will be able to sustain itself and contribute to the welfare of society, not only through the payment of taxes but with an awareness of how our society functions.

This is also an appropriate place to point out that the need to raise man's intellectual performance is not limited to the "average" man. In the highly competitive world of "future shock," the genius must perform at a greater level than the genius of today. This is most true if the nation is to hold its threatened status in the race for space, science, and technology.

To further underline the above discussion, we might also add that education is but one of the many professions recognizing the impending crisis. For example, physicians are researching the possibilities of using drug therapy to increase intellectual performance. Surgeons are designing and researching operations to erase impairments affecting intellectual performance. Last, geneticists are beginning to uncover and understand human characteristics before conception. Thus, man's intellectual ability may be increased before he is conceived.

The events and ideas mentioned above all but destroyed earlier concepts of the traditional preschool curriculum. As new preschool programs emerged, they reflected the theory espoused by Bruner (1960) that "any subject can be taught effectively in some intellectually honest form to any child at any stage of development." In the case of reading, since most preschool children were being exposed to signs, television advertisements, labels on food containers, magazines and books, and a variety of travel, it did not seem unreasonable to expose them to reading early.

Newer Concepts of Intelligence

It is rather doubtful that the launching of Sputnik or the technological revolution would have had any long lasting effect on the preschool curriculum had not other developments provided a rationale to question earlier practices. The next major influence on preschool education was the realization among educators that intelligence was not fixed or predetermined but instead depended on the early experiences of young children.

One of the more widely quoted sources concerned with the role of experience in intellectual development is J. McV. Hunt's *Intelligence and Experience*. Hunt (1961), after an exhaustive review of the literature, reversed the belief that one can wait for intellectual development to take place. According to Hunt, the role of experience in intellectual development is so powerful that it not only has a direct influence upon what development takes place, but also when that development occurs. Similarly, Bloom (1964) underlines the importance of the early years, particularly the environment in intellectual development. In his powerfully documented book, *Stability and Change in Human Characteristics*, he concluded that the period before four years of age was the time of greatest intellectual growth. Bloom estimated that approximately 50 percent of a person's intellectual development was completed by age four and another 30 percent by age eight. Thus, the writings of Hunt and Bloom were used as evidence to support the planning of structured environments to enhance the intellectual development of the preschool child, particularly academically oriented preschool programs designed to teach reading, writing and arithmetic.

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The Discovery of Piaget

Prior to the 1960's, Piaget, an eminent Swiss psychologist, had been studying the processes underlying the development of intelligence. His work was relatively unknown to American psychologists due to the lack of translations. Beginning with the 60's, however, translations of his work began to appear in the psychological and educational literature.

Briefly, Piaget views the child as a naturally active organism whose intellect is shaped by his interaction with the environment. As a result of interactions with his environment and physiological maturation, sensorimotor operations evolve into more complex mental operations that are tied to language. Needless to say, the work of Piaget influenced American psychologists and educators. More important, his concepts found their way into the early education curriculum.

Social and Political Forces

Another important force exerting pressure on curriculum change at the preschool level has been the public awareness of the relationship among poverty, intellectual development, and academic achievement. A major contribution here was Deutsch's (1963) analysis of environmental influences on the school achievement of disadvantaged children. Disadvantaged environments, he found, made academic success almost impossible. Children reared in poverty had few opportunities to develop language skills, visual and auditory discrimination skills or to manipulate visual properties. Moreover, they entered school with learning styles that differed from those of their more advantaged counterparts. In other words, their environments had inadequately prepared them for school experiences. Deutsch called for a new preschool curriculum based on the assumption that early intervention by well-structured programs would reduce the influence of the disadvantaged child's environment. The research of Smith (1963), Shipman (1965), and Hess (1968) also provided a decided impetus to the belief that the intervention of structured preschool programs should begin early if the attenuating influence of the disadvantaged child's environment was to be overcome.

The above research, coupled with the realization that an affluent American society could not allow the inequities of environmental circumstances to prevent young children from developing to their fullest potential, led the federal government to promote legislation focused on preschool education. Head Start, established under the Economic Opportunity Act of 1964, represents the federal government's most popular program on the War on Poverty.

The Head Start program was a significant piece of legislation for two reasons: First, it made direct federal government involvement possible at an age level earlier than any time before in America's history. Second, it forced recognition of the fact that children of the poor entered school seriously deficient of the abilities and experiences necessary to profit from education (Orton, 1967). It is also important to note that Head Start funding for FY 1971 reached an all time high of $360 million. Thus a number of exemplary preschool Head Start programs, some of which provide early reading instruction, are funded by the federal government. These programs now involve over 480,000 children with an average expenditure of $1,050 per child.

The documented success of federally funded Head Start programs, aimed primarily at providing the disadvantaged youngster with the basic skills necessary for successful academic achievement, has led the more advantaged families to demand the same opportunities for their children. As a result, the number of preschools is increasing and business organizations are franchising preschools. Unfortunately, approximately three fifths of the nation's population have incomes too high to make them eligible for Head Start and yet cannot afford the tuitions of private preschools. To say the least, this group is disenchanted with the increasing amount of tax dollars directed toward the disadvantaged preschool child. They are demanding public preschool education for their own children.

In addition to the Head Start legislation, the federal government has offered incentives to industry to enter the early childhood field. An amendment to the Labor-Management Relations Act of 1969 allows industry to establish funds for preschool centers for children of employees. As a result, a number of firms have already established preschool centers. A number of these centers expose children to early reading instruction.

Other evidence also attests to the fact that the federal government has exerted a strong influence on the preschool curriculum. In establishing priorities for its research and development program in education, the National Center for Educational Research and Development listed reading and early childhood among the top five priority areas for the five year period FY 1972 - FY 1976. To be more specific, over fifty percent of a $226 million dollar budget has been earmarked for research and development on learning to read and the education of children three to eight years old.

Through federal support and special projects, the body of research on preschool education has increased considerably. In 1967 the National Laboratory for Early Childhood Education, a network of seven centers located on university campuses, was established. Moreover, early educational programs are the focus of at least six of the federally funded Regional Education Laboratories.

Federal funds have also played a key role in the authorization of information on preschool education. The Educational Resources Information Center (ERIC) is an information network whose objectives are to collect, store, index, analyze, interpret, and disseminate information on educational research and development. ERIC includes a clearinghouse on reading (ERIC/CRIER) at Indiana University at Bloomington, Indiana whose focus is on reading and a clearinghouse at the University of Illinois at Urbana, Illinois whose focus is on early childhood. In sum, federal legislation has played an integrated role in the recent interest in early childhood education and reading.

The Montessori Method

The Montessori Method stems from the early work of Maria Montessori, an Italian educator. In 1906, Montessori was asked to direct a preschool program in the slums of Rome. It was at that time that she developed her teaching methods, based on the belief that the years three to six were the time periods in which young children formed both habits and bases for learning. Instruction in Montessori's classrooms was centered around structured materials such as blocks, beads, chains, rods of wood, and cubes of different textures to develop visual perception and visual motor integration. Although her method was widely acclaimed, interest in it eventually died.

There was a sudden rebirth of interest in the Montessori Method during the early 1960's. The immediate cause of the revival can be traced to the work of Nancy Rambusch (1962), who studied the Montessori Method in Europe. Rambusch returned to America to organize the American Montessori Society and to found the Whitby School located at Greenwich, Connecticut.

The Whitby School, like most Montessori Schools, offers a curriculum which includes reading, writing and arithmetic. In short, these events acquainted a whole new generation of parents to the Montessori Method.

British Infant School

In 1964 the British Infant School embarked on a new curriculum which offered and encouraged reading instruction at an early age. According to Villet (1969), the British developed a school atmosphere which was heavily influenced by the Montessori technique.

Children in the British Infant School do not receive reading instruction with preprinted reading materials but rather each child monitors his own progress in homemade books. Along with the assistance of the teacher, the child simply determines what he desires to learn on a given day. Later, the youngster extends and incorporates his goals to reading instruction in the form of experience stories by working through the following stages: (1) drawing a picture, (2) having an adult write down a dictated story about the picture, (3) copying the story, (4) memorizing the sound and looks of the story, and (5) reading the story to others. As greater interest in reading is developed, the child is encouraged to attempt to read books meeting his interests. At this point, the child begins to receive instruction in sight words and phonics.

Omar K. Moore

Early reading was also popularized by the research of Omar K. Moore with the "talking typewriter." According to Pines (1963), Moore contends that the ages between two and six are the most creative and active. He developed a "talking typewriter" to teach young children to read. Instruction with Moore's "talking typewriter" begins by introducing children to letters and their sounds. Eventually, the program proceeds to words, then to sentences and paragraphs, and finally stories. Of special interest, is the fact that Moore demonstrated that very young children were able to teach themselves to read with the help of educational technology.

Studies of Early Readers

In 1958, Dr. Dolores Durkin (1966) of the University of Illinois at Urbana, Illinois conducted two longitudinal studies of children who had learned to read prior to entering first grade. The results of her research led Durkin to conclude that: (1) preschool children are able to learn to read prior to entering first grade, (2) IQ is not a significant factor in preschool children's early acquisition of reading skill, (3) children who learn to read early continue to read and achieve at a higher level than their counterparts who do not learn to read early, and (4) that early reading is a pronounced advantage for children with low IQ's. In short, children who learn to read early seem to maintain their headstart. As might be expected Dr. Durkin's findings have had a considerable influence upon current views toward preschool reading instruction.

The Denver Project

Although early reading instruction had captured the imagination of educators earlier, it was not until 1960 that a major public school system concerned itself with the problem on a large scale basis. Undoubtedly, the most widely advertised project was the one conducted in Denver, Colorado under the direction of Joseph Brzeinski and funded by the U.S. Office of Education. This project was a longitudinal project involving over 4,000 children for a period of five years. Children in control groups followed a regular kindergarten program, and experimental children received formal reading instruction. The findings of the study revealed that: (1) reading skills can be taught effectively to kindergarten children, (2) gains in reading as the result of early reading instruction are maintained, and (3) that apparently early reading instruction does not have an adverse effect on vision, social and emotional adjustment, or the desire to read.

Educational Television

Unlike previous generations, the child of today is exposed to visual and auditory stimulation and information by the mass media. As a result the young child's gradual movement along the learning continuum is no longer restricted to the public schools. As a matter of fact, television has taken a giant step in the direction of introducing beginning reading to young children in their homes.

The Children's Television Workshop represents a carefully planned effort to apply the entertainment values and production techniques of commercial television to an innovative preschool curriculum. Featuring a format of fast action and entertainment, the producers of Sesame Street base their objectives upon the educational needs of disadvantaged preschool children. Consequently, the program exposes preschool children to instruction in language development, reading, and arithmetic.

To summarize, it seems fair to say that the current emphasis on preschool reading instruction is the result of a number of forces converging simultaneously on the preschool curriculum. First, events in technology and curriculum change, along with social and political forces and changes in the concept of intelligence have exerted a tremendous influence on revamping the preschool educational curriculum. Second, the rediscovery of Piaget and Montessori has had a lasting effect on the preschool curriculum. Third, reviews, reports, and research related to preschool reading instruction have received national acclaim in educational journals and popular magazines. Last, television has taken a plunge into introducing reading to preschool children. These, then, are the forces underlying the current popularity of issues related to preschool reading instruction.

CHAPTER 2

RESEARCH ON PRESCHOOL READING INSTRUCTION

Introduction

As noted earlier, during the past decade there has been a growing sentiment towards changing the character of preschool reading instruction. While the advocates for change are not explicit in their specifications for change, it seems fair to say that they appear to advocate formal preschool reading instruction rather than traditional readiness instruction.

In general, the proponents of formal preschool reading instruction base their position on a number of arguments. First, they raise the question as to whether the needs of today's preschool children are being met adequately by preschool programs which they contend are still operating under a philosophy which has changed very little since the thirties and forties. Second, the critics contend that today's preschool children have acquired larger vocabularies, have traveled widely, and have been exposed to a rich verbal environment. Third, they put forth the argument that many children are already reading on entrance to first grade. Finally, they assert that formal preschool reading instruction is more efficient and more economical than traditional readiness instruction.

Opponents to formal preschool reading instruction, on the other hand, maintain that reading instruction should be postponed for children until first grade because children need a prolonged period of readiness instruction. In other words, many preschool children may be limited in their intellectual ability, experiential background, and language development. Moreover, they warn that formal reading instruction might be harmful to the social, emotional, and creative potential of young children.

In addition to the above criticisms, other potential problems related to preschool reading instruction should be considered. First it is possible that preschool children may learn by a different means than they will at a later level. Consequently, formal reading instruction could actually provide difficulties later and interfere with the successful mastery of reading tasks at a later level. Second and along another dimension, if children are taught to read at the preschool level, it will be necessary to totally change and reorganize the reading curriculum at all educational levels. If the reading curriculum were not changed, one could conclude that the schools are not providing individualized instruction for children who learned to read early.

Regardless of whether one strongly agrees or disagrees with the position for formal preschool reading instruction, the fact remains that there is research evidence attesting to the efficacy of such instruction. In more cases than not, however, the research has stimulated a great deal of discussion and in many instances a great deal of confusion. As a result many educators are asking the following questions:

1. Should age and/or readiness be factors determining whether to commence preschool reading instruction?

2. Does kindergarten attendance affect readiness for reading?

3. Do perceptual programs commencing at the preschool level affect reading readiness and reading achievement?

4. Is formal reading readiness instruction at the preschool level more efficacious than informal readiness instruction?

5. How effective is formal reading instruction at the preschool level?

6. Is formal preschool reading instruction economical?

7. Does formal preschool reading instruction result in children experiencing emotional problems or adversely affect their attitudes toward reading?

8. What evidence is there that a child who truly learns to read prior to first grade will achieve better in reading during later school years?

9. To what extent is there evidence that formal preschool reading instruction is sufficiently effective that its practice should be widespread in kindergartens, nursery schools, and other so-called preschool education environments?

10. How effective is preschool reading instruction through educational television?

11. Should teacher aides and parents be used in preschool reading programs?

Naturally, the above questions are of particular interest to the school administrator exploring the possibilities of preschool reading instruction. The purpose of this section is to provide the administrator with information which will enable him to make decisions regarding the above questions.

The first topic to be discussed in this section deals with reading readiness and preschool reading instruction. Closely akin to this topic will be a discussion of when formal reading instruction should begin. A discussion of traditional kindergarten experience and reading will then be discussed, followed by a discussion of the effects of perceptual training programs on reading. Next, a discussion of informal and formal readiness instruction will be presented. Then, a review of research on formal reading readiness instruction and formal reading instruction will be presented along with a discussion of the effects of formal preschool reading instruction on affective behavior. Finally, we will consider educational television and the use of teacher aides as they relate to preschool reading instruction.

When Should Preschool Reading Instruction Begin?

The works of Hall (1904) at the turn of the twentieth century and Gessel (1925) marked the birth of the concept of readiness. Hall and Gessel implied that readiness was associated with the physical and neural maturation of the child. In other words, they proposed that the child gradually matures as he evolves through a series of stages, each of which is essential for the next successive stage to occur.

Arnold Gessel, Frances Ilg, and Louise Bates Ames (1940) collected rather exhaustive observational data on the development of reading and writing behavior of preschool school children. They emphasized "growth trends" and "developmental sequences." As the result of their efforts, the authors created a sensation of a sequence of a developmental gradient for all children. While the authors did caution about the individual nature of the child, their language led educators to believe that the developmental gradient was invariant for all children in spite of individual variations.

Although Gessel and his colleagues intended that their gradients be utilized as guide to understanding the individual child's level of maturity, it appears that American educators neglected to use them as a valuable set of guides for understanding the evolution of the young child's reading behavior. Instead, educators turned to the use of standardized tests, including those in reading, to determine when formal reading instruction should begin. Faced with the fact that large numbers of children were not attaining satisfactory levels of reading achievement, educators began to question the age at which formal reading instruction should begin.

As early as 1902, Dewey contended that formal reading instruction should be delayed until the child had reached a chronological age of eight. Like Dewey, Huey (1908) also advocated the postponement of formal reading instruction. Parenthetically, however, it should be pointed out that these two authorities did not base their conjectures on research.

The first and perhaps the best known attempt to determine the appropriate time to commence reading instruction was reported by Morphett and Washburne (1931). In this study, 141 first grade children in Illinois were tested with the Detroit and Stanford-Binet Intelligence Tests. Mental ages ranging from five years-six months to eight years-five months were computed for the children. Criteria for end of first grade reading achievement were the ability to recognize a minimum of 37 sight words from a given list and the successful completion of 13 progress steps in reading. On the basis of their data, Morphett and Washburne concluded that a minimum mental age of six years-six months was necessary for children to successfully learn to read. This conclusion was based on the finding that few children with a mental age less than six years-six months successfully reached criteria set for reading ability. As a result of this study, schools throughout America began to construct charts that would indicate when students had reached a mental age of six years-five months.

Following the above study, Gates and Bond (1936) indicated that the particular reading program should be adapted to the child rather than waiting for an optimum age of readiness to occur. Gates (1937) also questioned whether the findings of Morphett and Washburne could be generalized to other school populations. He reported the first grade reading achievement of 243 children in four schools according to the percentage failing to learn when reading achievement was evaluated according to mental age. He found that correlations between mental age and reading achievement varied with teaching procedures. This finding led Gates to conclude that the necessary mental age for reading varied with the materials and teaching procedures used, the teachers' evaluations of children s previous experiences, and the treatment of individual differences. In other words "how" was found to be more important than "when."

It is interesting to note that the conclusions reached by Gates are not unlike the attitudes prevalent among educators today. For example, Ausubel (1959) states that readiness is "the adequacy of existing capacity in relation to the demands of a given learning task." Similarly, Brunner (1962) has asserted that we should begin with the assumption that any subject can be taught effectively in some form to children, regardless of their stage of development. Bloom (1968) has also very cogently pointed out that if the quality of instruction and time available for learning meet the individual needs of each student, most students can be expected to achieve mastery of any subject.

In sum, it seems that formal reading instruction should not be delayed until a child reaches a "mythical level of readiness." Likewise, the decision to implement such instruction should not use age as an index of a youngster's readiness for reading instruction. Ideally, factors such as materials available, teaching procedures, the child's background of experiences, and the individual needs and characteristics of each child should be considered before commencing formal reading instruction. In short, the "how" of formal reading instruction should be the focal point for making decisions.

Effects of Traditional Kindergarten Experience on Reading Readiness and Reading Achievement

As the preschool school concept evolved during the 40's and 50's it was greatly influenced by the belief that the purpose of preschool education was to create a child-size world providing opportunities for young children to play and interact with their peers in a relatively unstructured atmosphere. Moreover, intellectual development and learning were believed to be dependent upon affective behavior such as feelings, self-worth, respect for others, positive attitudes, opportunities for social interaction, opportunities for exploration, and the like. In other words, a preschool curriculum comprised of formal reading instruction would have been considered to be evidence of a misunderstanding of the nature of education for young children.

In light of the above discussion, one might wonder what effects traditional kindergarten experiences might have on reading readiness and later reading achievement. If the traditional kindergarten experience does not have any apparent effect on reading readiness, then steps should be taken to improve the kinds of readiness experiences provided in kindergarten so that the goal of improving readiness can be met.

A number of studies have been addressed to the question of whether traditional kindergarten activities improve reading readiness. Unfortunately the results of these studies do not form a consistent pattern. Unfortunately, too, the reports do not always explain programs clearly enough to allow examination of aspects which might affect the outcomes.

Olson (1962) matched 68 incoming first graders who had had one year of kindergarten experience with 68 who had not on the bases of sex, age, position in family, occupation and education of father, and occupation of mother. Intelligence and readiness tests, maturity and citizenship ratings, physical characteristics, scholastic average and academic achievement were used to compare the groups. Children in the kindergarten group showed significantly higher reading, arithmetic, and total readiness, maturity ratings, scholarship, and number achievement than children in the non-kindergarten group at the end of grade one. It was concluded that long range benefits of reading achievement could be expected from kindergarten.

In a study of first graders who had or had not attended kindergarten or who were about to repeat first grade, Pratt (1949) administered a battery of readiness and reading achievement tests at the end of the first grade year. He observed that the kindergarten children showed superior first grade reading readiness and reading achievement when compared to the other children.

The effects of kindergarten experience on visual and auditory discrimination, letter knowledge, and the relationships of such knowledge to increased learning rate have also been examined. Haley, Dolon, Katz and Machin (1957) compared 628 first graders who had had kindergarten with 308 who had not, using intelligence, reading readiness, and visual discrimination tests as dependent variables. They determined that kindergarten children were superior in letter matching, auditory discrimination, learning rate, and mental age. The fact that the kindergarteners were not superior in word knowledge suggested that while visual and auditory abilities were increased with kindergarten experience, rate of learning in first grade may not have been.

Relative differences of entering school in Scotland at age five and entering school in the United States at age six were examined by Taylor (1950) in a study which also analyzed the effectiveness of readiness training received by the

Scottish children. Scores of 114 six-year-old Scottish children on reading readiness tests were compared with American norms for children of the same age. Scores on reading achievement tests were compared with norms for children a year older but without kindergarten experience. The Scottish children significantly exceeded the American children in readiness, particularly in perception, copying, and number tasks. The reading achievement differences gave the Scottish children a full year edge on American children of the same age. Taylor concluded that entering school one year earlier was responsible for the higher readiness and reading achievement of the Scottish children. Taylor also concluded that the year's schooling was responsible for the higher readiness and reading achievement of the Scottish children.

Two studies of Canadian children add further evidence for the effectiveness of kindergarten experiences in improving readiness. Fast (1957) compared 134 first graders who had attended kindergarten with 46 who had not. A readiness test administered in the fall and reading achievement tests administered in February and May indicated significant differences in favor of the kindergarten children. Gill (1967) examined differences between 50 children in a Senior Kindergarten, half of whom had also attended a Junior Kindergarten. Readiness test results showed significantly higher readiness abilities for children with Junior Kindergarten experiences. These studies and others discussed above suggest that kindergarten experiences are a valuable experience in reading readiness for most children.

Contradictory evidence has been provided by Fox and Powell (1964). They tested 294 first graders, 115 of whom had attended kindergarten and 179 of whom had not, and all of whom exhibited average IQs. Readiness tests and achievement tests were administered and scores were compared. No significant differences were found, leading the researchers to conclude that further evaluation of readiness activities in kindergarten was needed.

Haines (1960) attempted to trace possible effects of kindergarten training through grade six by comparing arithmetic and reading achievement grades of 603 children from two communities, only one of which offered kindergarten. He concluded that there was no significant effect on reading and arithmetic achievement at any level.

To summarize, the results of research on the effects of traditional kindergarten experience on reading readiness is not very clear. Instances have been reported where kindergarten experience demonstrated a facilitative effect on reading readiness. It is difficult, however, to determine how the more effective programs differed from less effective programs simply because the traditional kindergarten seldom offers the kind of documentation necessary to analyze an instructional program. With respect to the later effects of kindergarten, the research findings are more clear, indicating that the gains children made tend to "drop off" after first grade. In short, we really don't know how efficacious regular kindergarten experience is for reading readiness and reading achievement. A great deal more research needs to be conducted by researchers. Most important, the instructional program used needs to be documented. Future research should also be of a longitudinal nature.

Effects of Perceptual-Motor Programs on Reading Readiness and Reading Achievement

A number of authorities contend that perceptual development is the primary factor underlying reading readiness and reading achievement. Their contention is based on the results of studies of children with reading disability. Taken as a whole, such studies have demonstrated a moderate correlation between perceptual development and poor reading achievement. The reader should, however, be alerted to the fact that a moderate, even a high, correlation between perceptual development and reading readiness and reading achievement does not demonstrate a causal relationship.

In order to place the relationship between perceptual development and reading ability in a proper perspective, one should ask the following question: What perceptual-motor tasks are exactly like reading tasks? The answer to this question is obviously difficult. Moreover, this writer has failed to uncover a description of any perceptual-motor program that explicitly describes the way in which a particular perceptual-motor task is like a particular reading task. This criticism becomes immediately clear when one observes that in most cases perceptual-motor training increases perceptual-motor ability while failing to increase reading readiness scores or reading achievement scores. Nevertheless, the literature reveals that research exploring the effects of such programs on reading readiness and reading achievement is abundant in the literature.

A number of factors are important in the consideration of the value of perceptual and perceptual-motor development programs. The first of these is the focus as described by the program's originators. In some cases the focus is seen as almost totally visual, in others visual-motor coordination is stressed, and in still others factors such as neurological organization are treated. Distinctions on this basis are largely arbitrary and subject to researchers' whims in naming programs. With few exceptions, the programs are similar in reality. The second factor is the particular program used, whether commercially available or specially developed. This is probably the most meaningful factor, for purposes of discussion here. Although some researchers do not adequately describe their programs, it is often possible to infer the type of program used in a study so that programs can be compared on these terms. A third important factor is whether the program is, in fact, related to reading. A final important factor is the lastingness of the results. The paucity of longitudinal studies makes this difficult to examine.

The Frostig approach employs visual, auditory, kinesthetic, and tactile senses in developing perceptual abilities. Children see shapes (or words) and associate sounds, movements, and textures with them. Often used as part of readiness instruction, the Frostig approach has been used with varying degrees of success in research studies, depending on how the approach was adapted for research.

Roy and Roy (1969) reported a study in which 45 kindergarten children from three classrooms were given either: (1) the Frostig perceptual training program, (2) extra attention in class, or (3) no special treatment. Treatment sessions were held for 25 minutes on a weekly basis for a full year. Their purpose was to determine whether kindergarten itself facilitates readiness and whether the Frostig perceptual training program has a greater facilitating effect than the regular kindergarten program. A perceptual motor development test and a reading readiness test were used as pre- and post-test measures. Children who received perceptual training exhibited some advantage (not significant) over those in the attention group who held similar advantages over the controls. Chronological age did not correlate with readiness, but scores on the pre-test did. It was concluded that this particular perceptual development program did not contribute significantly to children's readiness.

Two evaluation studies of the Frostig program were conducted by Jacobs. The first study (1968) compared effects of the program on prekindergarten, kindergarten, and first grade children. After a year long administration of the program, all children were tested using Frostig's visual perceptual test. Children who took part in the program scored higher than controls, and first graders scored significantly higher than either prekindergarteners or kindergarteners on the perceptual test. For kindergarteners, no differences were found on reading readiness test results, however.

Jacobs' second study, with Wirthlin and Miller (1968) was designed to replicate the first and to determine the long term achievement and predictive values of the Frostig program. Experimental and control groups were drawn from disadvantaged schools and arranged so that: (1) readiness test scores could be obtained on kindergarteners, (2) first and second graders could be tested for long term effects of first grade training, and (3) that comparisons could be made of first graders with one or two years of exposure to the program. Results of the study indicated no significant differences between experimental and control groups on the Frostig test. Experimental kindergarteners scored better than controls on the Metropolitan Readiness Test which appeared to be a better reading achievement predictor than the Frostig test. Little relationship appeared between Frostig test performance and reading achievement. Two years of training produced better Frostig test scores than one year of training, and one year of training was better than none. It was concluded that pupils who were given the Frostig training achieved better on the Frostig test which correlated moderately with the readiness test scores. In a word, there appears to be no relationship between Frostig training and reading achievement. Thus, the Frostig program may have value if used to improve visual perceptual abilities, but not if used to improve reading readiness or reading ability.

Programs based on Kephart's thinking usually include activities which are somewhat different and often more energetic than those included in the Frostig program. Exercises to develop eye-hand coordination, concepts of form, and senses of laterality and directionality are common in the Kephart program. In general, the effectiveness of Kephart's program, like that of the Frostig program, appears to vary with the situation and purpose for which the program was used.

One study which stated an intention to include exercises to develop eye-hand coordination, form and body concepts, laterality and directionality was that of Falik (1969). He identified 20 children as being low in school readiness and gave them a perceptual motor development program based on Kephart's ideas. At the end of kindergarten, the experimental group was compared to 22 children, also identified as low in school readiness. No significant differences between readiness scores for the two groups could be found either at that time or later when the same children were tested midway through second grade.

Rutherford (1965) also based his perceptual motor development program on Kephart's ideas. Of the 64 kindergarteners in his study, those in the experimental group were taught play activities to develop laterality, directionality, body concepts, visual-kinesthetic matching, and eye control. At the end of the year, the children in the experimental group achieved significantly higher scores on readiness tests than did the control group, with boys appearing to receive the greatest effects from the program.

Kephart-based programs have also been used with special groups of children, notably children described as "perceptually handicapped." Meyerson (1966) reported a study in which kindergarteners identified as having perceptual problems were given eight weeks of training for 15 minutes a day. Training included muscle coordination and eye movement exercises. Pre- and post-test comparisons revealed that experimental subjects did not exceed control subjects on perception and readiness tests used. It was concluded that factors of economic status appeared to be more associated with readiness than perceptual factors.

Combined approaches to perceptual motor training are those in which schools (or researchers) select particular aspects of various commercial programs and incorporate them into their own programs. One example of such a program was that studied by Zirbel and Thompson (1971). They based their program on the theories of Kephart, Getman, and Perception Development Research Associates. Subjects were 62 kindergarteners, randomly assigned to experimental and control groups with the controls getting a regular kindergarten program while the experimentals received 30 minutes of perceptual motor activities, in addition to the regular kindergarten program, three times per week for 18 weeks. During first grade, both groups received conventional reading instruction. Standardized reading tests administered at the end of first grade showed significantly greater achievement by experimental subjects, but no differences due to sex. It was concluded that a program of perceptual development activities in kindergarten could favorably influence first grade reading achievement.

In a larger study of children randomly assigned to 28 kindergarten classes throughout a school system, Faustman (1966, 1968) examined the effects of a perceptual training program on readiness and on later first grade achievement. Teachers of 14 experimental classes received instruction in Frostig, Kephart, and Winterhaven program tenets in addition to regular in-service training received by all teachers and implemented programs based on these tenets in their classes. Experimental classes demonstrated greater achievement on perceptual measures at the end of the kindergarten program and exhibited significantly greater achievement in perception and word recognition skills at the end of first grade. It was concluded that this program, which combined in-service instruction for teachers with perceptual training in classrooms, was effective in improving first grade reading achievement.

McBeath (1966) compared several programs in a study designed to improve visual perception of perceptually handicapped kindergarteners. Of the 24 kindergarten classes participating, six received Kephart training, six received Frostig training, six received a combination of these, and six received regular kindergarten activities. Readiness tests and teacher rating forms were used to obtain data. None of the programs produced significantly better readiness results than the others, leading to the conclusion that none had greater advantages over the others in effectiveness.

A number of eclectic programs have been described in the literature which either do not specify the approaches which influenced them or go beyond the usual approaches into other areas. An example of the former is the program devised by Ellerman and Wadley (1970) who compared two groups of kindergarten children. The experimental group participated in a special program to increase verbal development, awareness of body concepts, and perceptual motor skills, The control group received traditional kindergarten instruction. Test results at the end of five months showed improvements by experimental subjects but not by control subjects. Mean IQ of experimental subjects increased from 105 to 115, while mean IQ of controls dropped from 104 to 100. The program was concluded to be successful in improving test performance.

Bentz (1970) also used a program combining perceptual and language training in a study designed to determine the effects of such a program on the readiness performance of kindergarteners. For 14 weeks, one experimental group received perceptual training, the other received language training, and the control group received regular kindergarten instruction. Readiness test scores revealed significantly better performance for perceptual group subjects over language group subjects and over control subjects on most subtests. Also, significantly greater performance was noted for language group subjects over controls in perceptual and copying tasks, while controls surpassed language group subjects in word meaning. It was concluded that the perceptual training was of greater benefit than the language training, that the particular language training program was not very beneficial, and that perceptual training was beneficial, particularly for children of average and below average readiness ability.

A readiness program of visual, auditory and verbal and number readiness training was used by Wingert (1969) in an attempt to improve the auditory and visual motor skills of children identified as weak in those areas before they entered first grade. Daily sessions were held during the six week summer program. Scores from the administration of the Frostig test and the Metropolitan Readiness Test were compared. No significant differences were found. It was concluded that while certain visual motor skills could be developed through perceptual training, there seemed to be little transfer of the effects of that training to reading tasks.

Irving (1965) also reported a study of the effects of a multi-sensory readiness program combining oral, aural, and visual procedures. Subjects, 100 kindergarteners from two schools, met in small groups with the experimenter. The experimental subjects were provided with learning experiences using stories, pictures, and tape recordings. Control subjects received standard readiness activities. Analysis of pre- and post-test scores indicated that children of low socioeconomic status benefited from intensified structured activity involving oral language while children of average socioeconomic status and average and above IQ benefited from the multisensory approach.

One study is available which attempted to increase perceptual motor and readiness abilities through the use of neurological training exercises. Stone and Pielstick (1969) used 26 second semester kindergarteners of varying perceptual abilities. Experimental subjects were given 30 minute sessions of neurological training (cross patterning exercises) daily for 18 weeks. Parents were encouraged to observe training and to continue it at home. Control subjects had play activities during the 30 minute periods. Pre- and post-test comparisons showed a significant effect for the neurological treatment on visual perception but not on intelligence or readiness. Thus, no clear evidence was found in favor of neurological training and it was concluded that such training is of little benefit in a reading readiness program.

In sum, there exists a number of programs based on the idea that improvement in perceptual, visual-perceptual, and perceptual-motor development leads to increased readiness for learning and reading achievement. These programs range from commercially developed instructional sequences to a potpourri of activities designed by local educators. Of particular interest is the fact that these programs do not appear to have been developed to increase children's ability to perform specific readiness and reading skills. On the one hand, these programs appear to be successful in increasing children's perceptual ability. On the other, they seem to be ineffective in increasing readiness. Likewise, perceptual training does not seem to effect later reading achievement. If one's purpose is to improve preschool children's perceptual abilities, he might do well to select any of the programs discussed. In contrast, if his purpose is to increase readiness ability and later reading achievement, he should probably select a program more closely related to the skills necessary for the successful acquisition of reading.

Informal Readiness Instruction Versus Formal Reading Readiness Instruction

As discussed earlier, the primary goals of the traditional kindergarten program are to meet the social, emotional, and motor needs of children. Instruction is very unstructured, being determined by the expressed needs of the child. This point of view is not shared by all preschool educators, however. As a matter of fact, a number of iconoclasts propose that preschool programs impose formal reading instruction upon children. Exactly what they mean by formal reading instruction is not very clear since most descriptions of formal reading programs are vaguely defined in the literature. On very limited descriptions of these programs, however, one can easily infer that one dimension of formal reading instruction employs published reading readiness workbooks. In certain instances language experience stories and other prereading activities are used. This section will present research that has attempted to determine whether formal reading readiness instruction is more effective than traditional readiness experiences.

From the start, it should be understood by the reader that it is impossible to make any substantial generalizations from the research contrasting traditional informal readiness programs to formal readiness programs simply because they have usually been defined as being either sub-first-grade, informal or formal, phonics oriented, structured and sequential, individualized, or permissive. For the purpose of this paper, these programs are defined as eclectic informal and formal readiness programs. In contrast, some generalizations can be made from the research comparing informal programs to formal programs that utilize workbooks in instruction. The following section will discuss the eclectic programs first. Then, a discussion of informal readiness instruction versus formal readiness using workbooks will follow.

Wise (1965) compared formal and informal readiness instruction over time. Eight hundred and eight experimental subjects received formal instruction in specific beginning reading skills while the 812 control subjects received regular kindergarten instruction. Readiness tests at the end of kindergarten, achievement tests at the end of the first grade, and an intelligence test were used as dependent measures. The readiness program was found to have a significant effect on first grade achievement, as did chronological age.

Naisbett (1959) also based an informal kindergarten readiness program on the interests and needs of individual children. Of the 55 children who participated, 47 were ready to read at the end of the program, five needed further readiness activity in grade one, and three remained in kindergarten. Unfortunately, Naisbett did not describe the program adequately.

Two kindergarten programs, undefined except as sub-first-grade and informal, were compared by Gabler (1963) who wanted to determine differences in activities, materials, and effectiveness of programs. Four kindergarten classes used each program. Intelligence and readiness tests were administered to children. An attitude test was administered to the teachers. Results indicated that teachers attitudes did not differ between programs, and that the programs were equally effective for both boys and girls.

The effectiveness of readiness instruction not only on readiness but also on first grade reading was examined in two studies. Silberberg (1966) administered an eight week readiness program to an experimental group while controls continued the regular kindergarten program. Readiness tests were given at the end of the program and after three weeks of first grade readiness instruction, and a reading achievement test was given at the end of first grade. Analysis of results indicated that the kindergarten program had not affected kindergarten readiness, but did affect first grade readiness. End of first grade achievement was not affected.

Harckham and Hagen (1970) taught a phonics oriented readiness program to an experimental group of 33 kindergarteners while a control group of 35 children took part in the regular curriculum. At the end of 10 weeks all children took tests of auditory discrimination and readiness. The phonics program appeared to increase readiness, since experimental group children scored significantly higher than controls on that measure, but did not appear to affect auditory discrimination ability.

Mayfield (1969) studied nursery school age children in an individualized reading program rather than a readiness program. He assigned 32 children to two groups, matched on sex, C.A. and M.A., and gave all children two and one-quarter hours a day of instruction as part of their program in an experimental Early Learning School. One group participated in a highly individualized program, each child choosing material to be learned and working directly with the teacher. The other group was taught as a whole. Pre- and post-test data obtained with intelligence and readiness tests revealed no significant differences between the groups on general development but significant differences favoring the individualized group in reading ability. Individualized reading was concluded to be more effective than group instruction in developing reading skill, but not in aiding general development.

Knudson (1970) also compared structured versus informal techniques, using a total of 190 students. Children in the experimental group received highly structured instruction in reading, math, language, science, music, and art, with no recesses and little free time. The control group had informal instruction in the same areas, but with time for free play, television, and recess. At the end of kindergarten, experimental children scored significantly higher on reading and achievement tests, and exhibited personality traits similar to controls. It was concluded that the highly structured approach was effective without harm to personalities.

Stanchfield (1971) introduced a structured, sequential program into 17 experimental classes while 17 control classes continued the regular kindergarten program. The sequence for the experimental program was listening for content, auditory discrimination, visual discrimination, oral language, perceptual motor skills, and sound-symbol correspondence skills. A readiness test administered at the end of the kindergarten year showed significantly higher scores for experimentals over controls, girls over boys, whites over Mexican Americans and blacks, and experimental blacks over control whites. Apparently, the structured, sequential program contributed significantly to readiness.

Some long term effects of early reading have been reported by Sutton (1965 and 1969). Her earlier report describes a permissive environment kindergarten reading program which consisted of a reading center to which children could go at will to browse, or to receive instruction. Of the 134 kindergarten participants tested for reading ability at the end of the year, 46 read about level 1.3, with a mean ability of 1.8. In first grade, 25 of the 46 children and five non-readers were placed in one homogeneous class and the remaining 21 were interspersed heterogeneously with 35 newcomers into three classes. By the end of first grade, 60 children read above level 3.0, and 60 percent of those were kindergarten readers. Of the 46, 15 children read at grade level 4.0 or higher. The gap between good and poor readers widened perceptibly during the first grade.

Sutton's second report followed the above children through grade three, and compared them to a control group which did not have the permissive environment kindergarten. Differences in achievement among the three groups showed steady growth differences between early readers and controls, indicating that long term effects of the early, permissive reading environment were positive.

To briefly summarize, the above research suggests that preschool reading programs falling under the rubric of formal readiness instruction are more effective than informal readiness programs, particularly when criteria for success are readiness test scores. With respect to later reading achievement, the results are not as clearcut. In more cases than not, studies were terminated at the end of first grade. Still, we would like to point out that the longitudinal studies reported indicate that the positive effects of formal readiness instruction on reading achievement can be identified as late as third grade.

The research described in the previous section was limited to rather loosely defined descriptions of informal and formal readiness instruction. Now we would like to turn to another area of research on the same topic. The difference here being that formal readiness programs used commercially prepared readiness materials. In fact, the majority of the formal programs utilized the readiness materials of published basal reading series. Again, we would like to underline the fact that investigators failed to describe the kind of informal readiness instruction control children received.

To begin, the use or non-use of a workbook in readiness instruction was the variable which separated experimental and control groups in a study reported by Collins (1960). Twenty seven children were divided into an experimental group which used a workbook and a control group which did not. She found no differences between the groups. It should be noted that she does not describe the length of the experiment or the means used to evaluate results.

Angus (1962) compared a highly systematized approach using workbooks, experience charts, labeling classroom objects, picture sequencing, and rhyme charts to an incidental approach of traditional kindergarten activities. A total of 320 subjects were divided into experimental and control groups and were compared on readiness and intelligence scores at the beginning and end of an eight week period. Analysis of test scores showed that the systematic approach was somewhat more effective than the incidental and that intelligence influenced readiness.

Weeks (1964) contrasted a commercially developed program to an informal kindergarten program. The commerical program used a prebasal readiness workbook. The 158 subjects in four experimental and four control classes, were given readiness tests at the end of the nine week program. The commercial program was found to be less effective in developing visual and auditory perception and chronological age appeared to be closely related to readiness. Interestingly enough the use of the structured program did not appear to affect children's anxiety.

Hillerich (1965) compared a workbook group with a control group for readiness differences and then followed them through first grade reading achievement. His 12 control classes received the same kindergarten instructional program as the 10 experimental classes, except that the experimental classes also had workbooks to use. Of the 605 children who started the experiment, 363 remained at the end of first grade. Readiness and reading achievement scores indicated that children in the experimental group exhibited adequate prereading skills at the end of kindergarten, that they retained these skills over the summer, and that they also exhibited greater achievement at the end of first grade. It was also noted that boys and girls gained equally well and that experimental children had fewer minor articulation problems in first grade.

In a more elaborate study of 986 children, Schoephoerster, Barnhart, and Loomer (1966) used workbooks coupled with specific teacher instruction related to workbook tasks as an experimental procedure with 496 children. The 490 children in the control group received regular kindergarten instruction and activities. The children were identified at three levels of academic potential. It was hypothesized that the structured workbook program would be more effective at all levels, and that experimental group children would score higher on the end-of-year readiness test. Analysis of test data revealed support for both hypotheses and indicated that children of below average ability benefited especially from the program.

Breon (1967) administered a readiness program suggested in a basal reader series to 63 kindergarteners and 131 first graders. He compared results of the two groups on the Metropolitan Readiness test administered at the end of the program and again following a summer vacation, and on two reading achievement tests administered at the end of first grade. No differences were found in the performances of the two groups. Breon concluded that it is possible to conduct effective readiness programs in kindergarten as well as in first grade.

At this point it might appear that there is overwhelming support for the contention that a formal readiness program using published materials is more effective than informal readiness instruction. Evidence to the contrary exists, however.

Blakely and Shadle (1961) compared two formal readiness programs using one class of 28 kindergarten children as an experimental group and another class of 58 children as controls. Both groups had the same teacher. The experimental group met in informal sessions in which activities grew out of the interests of the children and centered around language experiences and other activities. The control group used a basal series readiness workbook with suggested activities, group work, etc. Readiness tests and maturity ratings were used to equate the groups. Reading achievement was the dependent variable. Although the groups were comparable at the beginning of the study, the experimental group made significantly greater gains in reading achievement, with boys showing particularly significant gains. It was concluded that the experience-activities approach was a more effective program than the basal readiness approach and that boys, in particular, benefited from it.

O'Donnell and Michael (1968) also used a basal reader readiness approach, but they compared it to a conceptual language approach based on subject matter concepts. The 78 subjects were assigned to four classrooms, two of which received each approach over a six month period. Pre- and post-test comparisons showed significantly higher scores on reading readiness, visual discrimination, letter names, and direction-following for the language group children. Evidence from these two studies provides strong support for language experiences in readiness programs.

Ploghoft (1959) also examined the effectiveness of readiness workbooks. Children in two kindergarten classes were divided into a workbook group of 28 children, and a control group of 27 for the last nine weeks of the school year. Readiness tests and intelligence tests administered to all children at the beginning of first grade were used to evaluate the effectiveness of workbook use. No significant differences were found in mental age or in readiness as a result of using workbooks.

Before moving on, this seems to be an appropriate place to point out that research comparing the facilitative effects of informal and formal instruction on readiness and achievement has not been restricted to the use of reading materials. For example, Ayers and Mason (1969) taught science lessons to children in one kindergarten class but not to children in another. The lessons required one hour per day in addition to the regular readiness program which both classes received. Readiness test results for the two groups were compared. Both had increased readiness scores, with the science group significantly higher in readiness ability than the control group in listening, numbers and copying. Apparently increased readiness can be achieved by instruction other than the direct readiness activities usually found in kindergarten.

Neuman (1970) also taught science lessons to kindergarteners. A class from a university lab school and a class from another inner city school were given 30 minute science lessons three days a week in a series of 12 weekly lessons. A class from a third inner city school acted as a control group. Children who had the science lessons scored higher on readiness tests and also exhibited higher first grade achievement than children who did not.

In sum, there is no definitive evidence attesting to the fact that readiness for learning to read can be facilitated by using commercially published readiness materials at the preschool level. Likewise, there is no firm evidence indicating that gains made by children exposed to such instruction are maintained through elementary school. Probably the most reasonable interpretation of the research is that some formal readiness programs are more effective than some informal readiness programs. Since investigators have consistently failed to elaborate on the informal and formal programs used in their research, it is difficult to make generalizations from their findings to other populations. More than likely, there are also a number of effective formal and informal readiness programs which have not been compared. Finally, science instruction may well be an alternative to reading readiness instruction. Whatever the case, the science instruction studies reported open some intriguing possibilities for further research.

Formal Reading Instruction Versus Formal Readiness Instruction

In contrast to informal and formal readiness instruction is formal reading instruction. Formal reading instruction consists of carefully sequenced presentations of planned activities to accomplish pre-determined reading goals. Unlike informal and formal readiness instruction, formal reading instruction proceeds along a continuum from readiness to specific reading skills. In short, the learner is actually taught to read. The following section will first consider case studies of formal reading instruction, followed by a discussion of other research on the topic of formal reading instruction.

Case Studies of Formal Reading Instruction. Research literature in psychology and education contains many case histories of precocious children who mastered the skills of reading and other intellectual activities at astonishingly early ages. One such case reported by Terman (1918) is that of a child whose father encouraged early reading by presenting her with letters and their sounds when she was only 14 months old. At 20 months, the child knew letter names, at 21 months she could read words, and at 23 months she discovered that she could connect the words into meaningful sentences. Her early reading ability continued through her early school years, apparently without harmful affect on other school subjects, personality, or physical development.

Brown (1924) reported two studies in which she attempted to teach word recognition to preschool children. In the first, two three-year-olds were given individual word recognition instruction over a three month period. One child learned 34 words and the other 27. In the second experiment, 13 children ranging in age from two to six years were given individual instruction much the same as that in the first experiment. Toys, pictures, flash cards, and stencil cut outs were used. Results varied widely, according to the fluctuation in each child's ability to attend to learning tasks. Three letter words were easily learned, as were words which were intrinsically interesting to the subjects. Brown concluded that word learning is possible at the age of two, that individual differences exist among children, and that instructional methods should be adjusted to those differences.

Davidson (1931) reported the extent to which children from four to six, with an M.A. of four years, could learn to read. She placed 13 children into groups labeled as dull, average, or bright, depending on the ratio of M.A. to C.A. and taught sessions of kindergarten games, play, and individual reading to each group for approximately one hour daily over a period of four months. Tests of vocabulary and reading were administered throughout the experimental period and revealed steady progress for all children with the bright group outscoring the average and dull groups. Analysis of data by age also indicated that bright younger children often outscored average and dull older children. Davidson concluded that bright, average, and dull children do not learn reading equally well under the same conditions.

The above research on formal preschool reading instruction indicated encouraging success. But, the precise conditions which contributed to success are largely lost in the details of separate experiments. It is extremely difficult to try to make generalizations from one experiment to another. What was needed was a carefully controlled series of experiments, each building on what was learned from the others, so that a chain of reasoned information would be available.

Such a series of experiments constitutes the work of Fowler over the past ten years. Fowler believes reading to be a developmental process, beginning with word recognition and progressing from there. He hoped to begin the process at a younger age than usual and trace progress from that point, comparing development to that of older children. Beginning with his daughter, Fowler devised a model for teaching reading and methodically tested applications of the model in several situations. As his conclusions grew from experiment to experiment, Fowler refined the application of his model until it became quite sophisticated.

When Fowler first began his attempts to teach his daughter to read (1962) he had an extremely able subject (IQ 170 plus), and several open ended questions. He wanted to know exactly how much she could learn, what methods would be successful, and whether emotional or intellectual disturbance would result. For nine months, Fowler instructed the two-year-old child, giving her daily stimulation in 20-30 minute time periods and using a variety of methods. Tests before, during, and after instruction periods allowed periodic samplings of success. Fowler concluded that: (1) a two-year-old could be taught to read and to acquire a fairly extensive meaning vocabulary, although the gradual increase in learning might be a bit slower than that of older children, (2) that a variety of methods could be used successfully and a multi-method approach might be best, and (3) that some emotional disturbance, accompanied by reduction of intellectual performance might occur, but could probably be adjusted with careful attention.

Fowler's next experiment (1964) involved the construction of a model which organized programs of reading instruction for two-to-four-year-olds. He suggested that the structure of reading involves the graphic coding of the phonemic structure of words, then graphic patterning of words into sentences, then patterning of meanings of the visual-sound structures. First stages of instruction should be devoted to graphic coding and patterning and later stages to meaning patterns. To test his model, Fowler used 30 preschoolers of whom four three year olds learned to read preprimers after three to five months and a two year old after seven months. All of the children learned at least 40 words during the nine month experiment. By systematically organizing the structure of what he was about to teach and then dividing it into easily learnable units, Fowler was able to achieve success with very young children.

The next step in Fowler's research was to compare two groups of children. Fowler (1965) used three sets of identical Negro twins and a set of white triplets as subjects. Of concern at this point were further study of the structure of the process, discovery of appropriate stimulus conditions, and the analysis of effects of reading on psycho-social development. One of each pair of twins and two of the triplets were given three to five months of reading stimulation for 15 to 50 minutes each day in a nursery school setting. The other children participated in regular nursery school activities and showed no indications of reading ability. All of the experimental group children made some progress, with the triplets becoming the most achievement oriented. From this study, Fowler acquired further evidence that young children could learn to read under an analytic structural approach and found indications that psycho-social development might be temporarily but not permanently slowed by learning to read.

Having discovered an effective model and effective approaches to instruction within it, Fowler was ready for a large scale study. He (1967) selected 100 three-to-five-year-olds for instruction in 12 to 30 minute daily periods over a period of four to six months. Carefully designed tasks were used to facilitate grasp of the analytic structures of reading while remaining attuned to individual children's motivations. Pre- and post-test scores revealed that 46 of 63 children who completed the program had begun to read and had grasped most fundamental word recognition abilities. Children's cognitive processes had been effectively involved in the analytic structure process of reading.

In his most recent publication, Fowler (in press) reported on a three year investigation designed to test the usefulness of a nursery school under varying teaching styles and to measure children's characteristics, patterns, and progress in reading. The 109 subjects, ages three to five, in first and second years of the nursery program, participated in a three hour daily program of reading, music, mathematics, and rest and play periods. The reading program lasted five to six months each year and was concerned with word learning, visual discrimination, and sentence learning exercises in a developmental sequence. Reading and intelligence tests showed M.A. to be the most consistent predictor of success in learning to read and also showed that certain of the analytic cognitive operations in Fowler's model were essential to learning to read. Fowler concluded that while reading ability is part of a series of learned developmental processes, instruction in certain required operations will allow its occurence earlier than is commonly thought.

Research on Formal Reading Instruction. Apparently the above case studies, along with the fact that great numbers of children enter first grade reading, convinced many educators that preschool programs should provide children with formal reading instruction rather than readiness instruction. In fact, as early as 1947 Scott compared the effectiveness of informal readiness and formal reading programs at the kindergarten and first grade levels. Scott organized two matched pairs classes of slow first graders and fast kindergarteners. One class received readiness and then reading instruction while the other continued in a kindergarten program. A year later, at the middle of first grade, the group which received readiness instruction followed by reading instruction, exhibited significantly greater scholastic achievement, better attitudes, and was generally found to be placed in higher reading groups.

The above report was followed by others. Bacci (1961) described a highly individualized program based on the premise that contemporary society prepares children for reading at earlier ages than has previously been the case. Two kindergarten classes were used in the study. One class received 15 to 20 minutes a day of phonics instruction with teacher-made materials. Results of testing after six months were so encouraging that the reading program was installed in all kindergarten classrooms, with the stipulation that instruction was not to be forced upon children who did not grasp the material. These children were to be given something else to work on until a time when they might be more ready for reading instruction.

Cooper (1962) compared readiness and reading instruction in kindergarten as they related to first grade reading achievement. The 70 control group children received intensive readiness instruction, including workbook activities throughout the 20 week second semester of kindergarten. They began formal reading instruction in the fall of first grade. The 70 experimental group children received the intensive readiness program for 10 weeks and reading instruction for 10 weeks. First grade instruction began for the experimental group where the kindergarten program ended. Results of intelligence, readiness and reading achievement tests were analyzed. The experimental group significantly surpassed the control group in reading readiness and in reading achievement. Cooper concluded that the intensive readiness program coupled with formal reading instruction in kindergarten was highly effective.

The Denver Public Schools were responsible for a system wide program to determine the effectiveness, both immediate and long term, of reading instruction in kindergarten. As reported by Brzeinski (1964, 1967), and in a preliminary report by the Denver Public Schools (1962), the school system began reading instruction in kindergarten and followed its effects through grade five. Of the 4,000 kindergarteners, half received experimental reading instruction while the rest served as control subjects. Beginning with grade one, the control subjects were placed into either a regular or an experimental first grade, which began with the experimental instruction, then shifted to an adjusted program in grade five. The experimental kindergarten subjects were placed into either a regular or an adjusted first grade program which continued from where the kindergarten program had ended. Experimental instruction included word recognition, oral, visual, and context skills. Specially constructed tests were used throughout the program to evaluate progress at frequent intervals. The experimental kindergarten group achieved the highest initial and long term gains of all the groups on all measures. The regular kindergarten group achieved higher long term results than the remaining groups. It was concluded that beginning systematic reading instruction, while it does not produce immediate advantages over regular instruction, can produce better readers over long term and that early instruction, even if not followed up, does not adversely affect reading achievement.

Stevenson (1964-65) reported a study in which both reading and mathematics were taught in kindergarten. The subjects were identified as high or low in intelligence and the top ranked children were given two and one half months of readiness instruction while the others had five. The experimental subjects then participated in a formal reading and mathematics program for two months. Children in this group continued learning at an accelerated pace and had completed three grades' work in two years. The study was repeated using children from six schools instead of one. The success of both experiments led to the acceptance of the approach as an accelerated program for the top 30 percent of kindergarteners.

Gruber (1965) investigated the effectiveness of a linguistic approach to formal reading in kindergarten. The subjects were divided into experimental and control groups, based on their word recognition abilities at the start of the study. Experimental children were taught a modified linguistic program, including Dr. Seuss books for 15-20 minutes per day for a month. Test results indicated significant differences in achievement in favor of the experimental group. The modified linguistic program was concluded to have been successful.

Reading achievement and pupil behavior in grade one was observed by Burtis (1965) in a study of 112 children who either had or had not received reading instruction in kindergarten. Readiness, intelligence and achievement tests were given and analyzed by analysis of variance. It was concluded that formal reading instruction in kindergarten resulted in greater achievement in grade one.

Kelley (1966) and later Kelley and Chen (1967) reported a study of 221 kindergarteners, half of whom received readiness instruction while the others received reading instruction during the spring semester of kindergarten. Reading achievement tests, administered at the end of the semester revealed significant differences in favor of the reading instruction group. Significant differences were noted, too, between high and low ability children, both in reading and in attitude toward reading. It should be noted that these results are hardly surprising since only the experimental group actually had reading instruction and the tests used were reading achievement tests.

In addition to the research reported to this point we might do well to point out that research on i.t.a. instruction has examined the possibility of using this system in kindergarten as well as in first grade. Downing (1964), for example, reported considerable success in using i.t.a. to teach children ranging in age from four to six. Alpert, Tanyzer, and Sandel (1966) reported somewhat less encouraging results. They introduced i.t.a. in a formal reading program in kindergarten and found children generally capable of handling the system. However, they reported that these same children experienced no advantages either in reading or in spelling over children who began i.t.a. instruction in first grade.

Shapiro and Willford (1969) conducted a longitudinal study to contest Alpert, Tanyzer and Sandel's results. They divided 250 children into kindergarten i.t.a. groups, regular kindergarten groups, and first grade i.t.a. groups and followed these through second grade. After five months of first grade, the i.t.a. kindergarteners achieved significantly higher in word recognition, comprehension and spelling. They continued to surpass the first grade i.t.a. children throughout first and second grade. The contrasting results leads one to speculate that some other variables must have been at work to account for differences between the Shapiro-Willford and the Alpert, Tanyzer, and Sandel studies.

Finally the most recent study to date which holds significance for preschool reading instruction was conducted by Durkin (1970). Based upon her earlier investigations of children reading prior to first grade, she proceeded to research the effectiveness of an early reading program with four year old children, following them through the beginning of first grade. She selected 36 pupils according to an open-enrollment procedure. Twenty boys and 16 girls were randomly assigned to two classes. At the start of the program, the children, more than half of whom came from blue-collar backgrounds, were tested as to IQ and preprogram achievement. On the Stanford-Binet Intelligence Scale the group's mean was

113.6. The preprogram test consisted of subtests on word, letter, and numeral identification. During the two years of the experiment, a format was followed which allowed for 20 minutes of formal reading instruction each day. Only half of the class at a time participated, with the other half engaging in a free-choice activity during this period. After the 20 minute periods, the groups were reversed. As interest and achievement levels became apparent, the children's grouping patterns were rearranged. During the second year of the study, the workbook, We Learn to Listen, was incorporated into the curriculum. Additional instruction was based on a language experience approach. At the end of the first year, the average number of words learned was 29.1 with a standard deviation of 15.9. The second year of testing revealed that the pupils could identify an average of 123.8 words. Tests of letter, numeral, and sound identification indicated that mean achievement for the children was approximately 49, 47, and 15, respectively. Of special note is the fact that when achievement scores were correlated with chronological age and IQ no statistically significant differences were noted with regard to the former, and coefficients were only significant predictors with regard to the IQ of boys. In a word, this experiment indicates that very young children respond to formal reading instruction. Moreover, chronological age does not seem to be an important factor.

Educational Technology and Formal Reading Instruction. Also of particular interest is the fact that educational technology and behavioral engineering have been applied to early reading. At the preschool reading level, numbers of machines have been developed to teach certain reading skills. Programmed instruction, itself a product of technological advancement, has also been used in preschool reading programs.

Evans (1965), for example, studied the early reading behavior of a single three year old child who was taught to read by a machine called Multi-Max which allowed her four answer choices and gave immediate answer feedback. Original materials were phonics related, but later other basal materials were used. By the time she was four, the child read at level 3.0, and when she was five and a half, she read at level 5.7.

Staats and others (1964) tested the efficiency and durability of a machine oriented reinforcer system, using three four year old children. Tasks were phonic choice and discrimination activities, presented in forty 20 minute sessions. Correct responses were reinforced with tokens which could then be traded for prizes. Results indicated that the system maintained steady behavior over time, that reading materials and presentation could be controlled well enough to allow study of other variables in reading acquisition, and that cumulative records of the study provided sensitive measures of behavior.

Three studies employing programmed materials with kindergarten children show how varied such instruction can be. McDowell (1968) used programmed materials and several stimulus conditions with 22 kindergarteners of comparable intelligence. Procedure I included echoic (sound) training as a stimulus for learning 14 words; Procedure II used a tactile stimulus instead of the echoic; and Procedure III used neither. Pre- and post-tests of word knowledge showed that children experienced greater success without the echoic stimulus. It was concluded that kindergarten children can learn vocabulary using various stimuli, but echoic and tactile stimuli are not required for word learning.

Watkins (1971) used commercially available programmed materials and teaching machines with six matched pairs of five year old children just entering school in England. Intelligence, family status, perceptual ability and readiness data were secured for each child. Programmed materials were used by one group as directed by the teacher's manual. The other group participated in group lessons with the investigator which were designed to teach the same content being covered in the programmed texts. Instruction for both groups consisted of 15 minutes per day for a four month period. Comparison of pre- and post-test results showed that the programmed group had learned approximately one third of what it had been taught. Greater fluctuation in performance was also noted for programmed group children.

In brief, the amount of research on formal preschool reading instruction is increasing. Unfortunately, most of the research is of the one-shot case study type. Very little systematic research dealing with the topic has been reported. Even more disappointing is the fact that the research reported provided vague descriptions of the instructional programs used. Clearly, descriptive terms such as "formal reading instruction" and "customary readiness instruction" are difficult to interpret. Moreover, when a research study neglects to report in detail procedures involving time spent on teaching reading, precise instructional materials used, measures to assess the effects of instruction, and the like, it is difficult to plan subsequent research. Consequently, the research findings on formal preschool reading instruction is far from unanimous and less than clear. In fact the best that can be said at this point is that informal preschool reading instruction is probably just as effective as formal preschool reading instruction. This argument notwithstanding, we might also add that the paucity of longitudinal research on the topic adds little evidence supporting the long term effects of formal preschool reading instruction. The jury, then, is still out. More evidence is needed. But this matter will be treated with greater precision in the concluding section.

Effects of Preschool Reading Instruction on Affective Behavior

At this point, we would like to remind the reader that the majority of the research reported has not been designed to prove the value of early reading instruction. It has been designed to determine the effects of it. We would like to hastily add that although the focus of concern has been on the learning of reading skills, researchers have been concerned that the effect of early reading instruction is not detrimental to the social and emotional development nor the creative development of the children involved.

Emotional Problems. A widely held belief among opponents to preschool reading instruction is that early reading instruction may result in adverse side effects. For example, Smith (1955) argues the possible emotional problems resulting in teaching very young children to read. Smith bases her argument on reviews of more than 260 studies which indicate that the incidence of emotional problems among retarded readers ranges from 42 to 100 percent. It should be noted, however, that the basis for this position stems from data on children who, for the main part, were not exposed to preschool reading instruction. In other words, a causal relationship among reading disability, emotional problems, and preschool reading instruction has not been demonstrated.

The warning that young children who are exposed to preschool reading instruction might eventually have emotional problems must come from research on teaching preschool children to read. Unfortunately, only a few studies have reported data relevant to this question.

Mason and Prater (1966) examined the psycho-social effects of reading instruction upon kindergarten children. Kindergarten subjects were assigned to one experimental and two control groups. Pretesting established the comparability of three groups on intelligence, reading readiness, and personal-social adjustment. Screening tests for vision and hearing were also conducted. The experimental group received regular instruction in reading from an experienced first grade teacher. At the end of a five month experimental period, all children were retested for reading readiness and personal-social adjustment. The results of the study revealed that boys displayed less acceptable classroom behavior as a by-product of reading instruction.

In contrast to the above study, a number of studies (Brzeinski, 1964; Durkin, 1966; Sutton, 1969) have failed to find that formal preschool reading instruction does result in harmful effects on the emotional behavior of children. In short, the hypothesis that emotional problems are related to early reading instruction is still tentative. It would be very unwise to suggest that there exists a causal relationship between early reading instruction and emotional problems until more research is reported.

Dislike for reading. Closely related to the argument of possible emotional effects is the argument that teaching preschool children to read may result in a chronic dislike for reading. Although this belief has been widely accepted among opponents to preschool reading instruction, it has not been substantiated by research. In fact, research to date suggests that early exposure to reading does not result in later negative attitudes toward reading. Once again, however, only a few studies dealing with an important area of preschool reading instruction have been reported.

The first study dealing with the effects of early reading instruction on attitudes toward reading was reported by Sutton (1965). One hundred and thirty four kindergarten children received 15 minutes of reading instruction per day during the school year. At the end of the year one third of the children achieved a reading grade level of three months on the Gates Primary Reading Test. Sutton also reported that the majority of the children viewed reading as evidence of increased maturity and as a tool for learning.

In another study, Kelley (1966) assigned kindergarten children to two groups for instruction. The experimental group was given reading instruction while the control group was given only readiness instruction. At the end of the school year, the California Reading Test and three attitude scales were administered to all children. Analysis of the data revealed that the experimental group surpassed the control group in reading skills. Attitude scores, however, were found to be a function of readiness such that high IQ children in experimental and control groups surpassed low IQ children.

In summary then, research exploring the effects of early reading instruction suggests that exposure to such instruction builds positive attitudes toward reading. Consequently, early reading instruction may provide a basis for better adjustment toward school work in later years.

Educational Television and Preschool Reading Instruction

As many educators well know, the expense of providing formal reading instruction to all preschool children is almost prohibitive. The use of educational television, however, may well be one technique to make the task financially feasible. It is not surprising, therefore, to find support for formal preschool reading instruction through the television media in the literature.

Early Television Programs. The earliest report dealing with a systematic program of beginning reading instruction was described by Jones (1962). In this effort, the formal reading instruction children received was further stimulated through television lessons for parents and the dissemination of a book to parents describing how to prepare children for reading instruction.

A more elaborate experiment utilizing television was reported by McManus (1964). This research was based on the success of the Denver Prereading Project discussed earlier. In February of 1963, stemming from the success of the experimental work, the Denver Prereading Project was initiated with approximately 200 parents and children participating. This four month project attempted to determine how successful a prereading television/parent program would be in advancing the skills of the preschool child. Parents in the experimental and control groups brought their children into the school system for pre- and post-testing sessions. Both groups filled out appropriate questionnaires. However, the experimental group participated in a program entitled "Preparing Your Child for Reading." The program was televised on WENH-TV in New Hampshire. Parents participated in lectures and obtained specialized materials for use with their children. The children in the control group could not participate as they were not in the reception area of the broadcast. The findings, at the end of the series, showed that the gains of the experimental group in letter identification, letter sound knowledge, sight-word recognition, and ability to identify words using the beginning sound and context clues was markedly superior to the control group.

The effectiveness of television and parental assistance in fostering early reading was further demonstrated by Perlish (1968). An experimental program entitled "Wordland

Workshop" was broadcast to 134 preschool children between the ages of three years-0 months and three years-11 months in the reception area of WFIL in Philadelphia. Perlish developed a combination reading approach using a format involving a kangaroo with a word pouch and a series of one-minute filmed morphophone spots. Games, stories, newsreels, and puppet sequences were also used. The program was televised five days a week for 39 weeks. The control group, which consisted of 162 children of the same age in the WNBF, in Binghamton, New York, viewing area watched "Captain Kangaroo." At the end of the experimental period, the data revealed that when reading development was measured with regard to recognition of printed words, the experimental group obtained significantly higher scores.

Sesame Street. The most recent undertaking in educational television for the preschool child is Sesame Street, a production of the Children's Television Workshop, which is televised over most educational television stations in the United States. Founded by Mrs. Joan Cooney, and financed by the Carnegie Corporation, the Ford Foundation, and the U.S. Office of Education, Sesame Street was first presented in November of 1969. The program makes use of the principles of repetition and discontinuity. Brief sequences, lasting no more than six minutes, present information on body parts, geometric forms, relational concepts, and various skills related to reading. This broad scope of skills is taught in a multitude of ways by a variety of characters, ranging from the main human personalities in its integrated cast to cartoon-animated characters, and most effectively by the various moppet puppets, mainly Kermit the Frog, Ernie and Bert, and the "Cookie Monster." Quick and unrelated segments are presented in tachistoscope fashion and are based upon the style of television commercials that have been so effective with young children. The viewer, during these one minute commercials, is bombarded with flashes of numbers and letters which sponsor the program for the day. The popularity of the broadcast is revealed by its Neilson ratings which estimate its preschool viewing audience at over six million viewers daily.

Undoubtedly, Sesame Street is a popular success: the viewing audience has doubled and the series is now being aired in over 20 foreign countries. More important, however, are the positive results of the evaluation of the programs.

After an extensive analysis of the data collected by the Educational Testing Service, Ball and Bogatz (ED 047 823) made the following conclusions: (1) Sesame Street has demonstrated that television is an effective medium for providing instruction for preschool children, (2) children who watched the most programs learned the most, and (3) the best learned skills were skills receiving the most program time.

Not all the observations of Sesame Street have been positive. Many educators have argued that a number of valuable objectives for preschoolers were excluded from the series. Of course, this is a subjective criticism. If any evaluation of Sesame Street is to be legitimate, it must be made with respect to the objectives of the program.

The first major criticism of Sesame Street stems from a study reported by Sprigle (1971). In this study, Sprigle assigned 24 pairs of children to an experimental or control group. The experimental group viewed Sesame Street and was involved in all additional activities suggested by the Children's Television Workshop. Instead of viewing Sesame Street, the control group spent an equal amount of time in other learning activities. Surprisingly enough, Sprigle found that the experimental group failed to perform significantly better than the control group on the Metropolitan Readiness Test administered at the beginning of first grade.

It should be noted that an experimental design, as Sprigle admittedly utilizes, is inappropriate for evaluation. Obviously, there exist other treatments less effective, equally effective, or more effective, than Sesame Street. The purpose for evaluation is to make decisions. At least one factor which influences educational decisions is cost. Unfortunately Sprigle failed to interpret his data in light of the cost of the experimental and control treatments. In other words, if two programs are equally effective, one might just as well select the less expensive of the two. Space does not permit a more detailed discussion of other methodological issues related to this study.

Also surprising (to Sprigle) was that advantaged children learned 15 percent more than disadvantaged children. It seems reasonable to believe that an effective program would increase the variance between advantaged and disadvantaged. In short, children with the more developed base for learning should be expected to learn more at a more rapid rate.

The second source of doubt concerning Sesame Street deals with the Educational Testing Service's evaluation mentioned earlier. In this study children were selected on the basis of being either socially advantaged or disadvantaged. The sample was then administered a pretest based on Sesame Street's instructional objectives. Following the Sesame Street series, subjects were placed in four groups, based on viewing patterns. Group One had viewed Sesame Street less than once per week. Group Two had viewed it at least twice per week. Group Three had viewed the programs at least four times per week. Finally, Group Four had viewed more than five programs per week.

The results of post-test scores revealed that children who had viewed the series the most learned the most. These results should, however, be viewed with caution. Once again an experimental design failing to meet the assumptions of parametric statistics was employed and the conclusions of the study are based on gain scores. Other weaknesses in the study are reported by Ingersoll (1971).

To summarize, preschool reading instruction through educational television has been accepted by the public and by many educators with some enthusiasm. The effectiveness of instruction through this medium has been praised and questioned, sometimes with more passion than objectivity. The educational community would be well advised to withstand judgment on the effectiveness of this approach until additional evidence is offered. For example, it is not clear how first grade programs should be articulated with the content of preschool reading instruction provided by television. Moreover, the real worth of this method must be determined by longitudinal studies.

Teacher Aides and Preschool Reading Instruction

A reoccuring topic relevant to preschool reading instruction deals with the appropriate ratio of teacher and/or adult to pupils. Although no definitive evidence exists regarding what a desirable ratio might be, many educators maintain that a ratio of one to six is ideal. Indeed, a ratio of one adult to six children is costly. Many administrators, therefore, consider preschool reading instruction to be impractical.

The most obvious way of alleviating the cost referred to above is to utilize teacher aides and/or parents in the preschool reading program. Administrators are aware of the positive effects teacher aides have had on regular school programs. However, they may not be aware of the effects aides and parents have had on preschool reading readiness and reading programs.

The effectiveness of teacher aides in readiness programs has been examined in a few studies. In general, the help of aides has resulted in greater achievement, perhaps because of increased attention given to individual children.

Goralski and Kerl (1968) compared readiness results of kindergarten classes having none, one, or five teacher aides. Inservice instruction was given to teachers on the proper use of aides. Analysis of pre- and post-test gains showed the greatest achievement in classes with one aide, followed by classes with five aides. While differences between classes with and without aides were significant, differences between classes with one and five aides were not. These results could be interpreted as meaning that it is difficult for the preschool teacher to effectively manage more than one aide.

The use of parents as aides in readiness programs is an intriguing variation of the aide theme which has had mixed success. Keele and Harrison (1971) used parent tutors with one group of kindergarteners and first graders and student tutors with another. Tutors were trained in less than two hours and given a manual to follow. For six weeks tutors worked with children, teaching letter naming, sounding, and blending. Analysis of pre- and post-test results on readiness tests indicated that the tutoring had made significant differences in scores, but that the kind of tutoring had not. In a structured program, then, the use of parents or students as tutors might add to the precision of instruction.

A less structured approach to the use of parents as tutors was investigated by Niedermeyer (1970). A group of 91 volunteer parents from eight schools was given instruction in the use of exercises involving words, beginning and ending sounds, and blends which would appear in the 12 weekly lessons of the program. Each week the 74 participating children brought home packets of exercises which they and their parents were to use. School-to-home feedback and degree of parent accountability were varied among the parents. Pupil reading performance, amount of parent participation, and pupil attitudes were used to evaluate the program. Pupil performance and attitudes were significantly higher among participating pupils as compared to pupils in the control group. The highest performance was found in children whose parents had received feedback and were held most accountable for their children's progress. It was concluded that parents can assist their children in readiness activities and that the degree of organization of a parental program is a factor in its success.

To sum, the limited amount of available research tends to support the belief that teacher aides and parents can be used effectively in a preschool reading program. Optimum success appears to be achieved when the teacher has only one aide to manage. As might be expected, structure and feedback have a facilitative effect on the performance of teacher aides. Consequently, if aides are to be used in the preschool reading program, administrators should provide in-service education for aides and teachers.

Conclusion

In the preceding sections an attempt was made to acquaint the administrator with the research on preschool reading instruction. We presented questions of interest to the administrator and proceeded to discuss the literature most pertinent to those questions. In this concluding segment, we would like to reflect on those questions by way of criticism and suggestion.

And now the key-note question: Should age and/or readiness be factors in determining whether to commence preschool reading instruction? Frankly, the only perspective from which to view this question is that the research very definitely indicates that preschool children can and do learn to read.

A question that is not so easily resolved deals with whether informal or formal readiness experiences are more appropriate for preschool children. The literature reveals that both have positive effects on readiness for reading and reading achievement. Probably, the best way to answer this question is to ask the following question: To what extent are administrators ready to insure that their schools will articulate the formal preschool reading program with the first grade program? Obviously, if the formal reading readiness program is not commensurate with the first grade reading program an informal readiness program would be more desirable. If, on the other hand, first grade instruction systematically builds upon what the child has learned and first grade teachers are willing to provide individualized instruction for the child who acquires reading skills early, a formal readiness program might be more desirable.

Now, the question that has served as a springboard for a great deal of discussion: How effective is formal reading instruction at the preschool level? Research reports indicate that formal preschool reading instruction is effective. In fact, it is apparent that many preschool children respond to and enjoy actual reading instruction. We would like to hastily add, however, that we really know very little about formal preschool reading instruction. As a matter of fact, in more cases than not we found that preschool reading instruction is achieved by simply moving the first grade curriculum downward. Certainly, moving first grade reading instruction downward does not constitute a desirable preschool reading model. Formal preschool reading instruction should be guided by principles of learning and development rather than by existing first grade models.

The above argument notwithstanding, we would like to point out that we actually know very little about the scope of formal preschool reading instruction. That is, what skills should be taught? The same is true of our knowledge concerning the task steps the child must go through to acquire reading skills.

Closely related to the above statements is the fact that we have not identified the age placement of reading skills. In other words, we do not have answers to the following questions.

1. What reading tasks can the preschool child learn with reasonable success?

2. What student characteristics are prerequisite to the preschool child's mastery of a given reading task?

3. What prerequisite characteristics are amenable to training?

4. What alternative training procedures can be imposed upon children who lack the prerequisites for learning reading tasks?

Another area which we know little about is the timing of preschool reading instruction. What we mean here is how fast each reading skill should be taught. Within this same area, we do not know the following: (1) how long a session of formal reading instruction should last, (2) with what frequency should preschool children be exposed to sessions of formal reading instruction, and (3) whether training on particular activities should be continued until all task steps related to a particular reading skill are mastered to a reasonable degree of efficiency.

Moving on to another important area, it seems safe to say that we are limited in our knowledge about how reading skills should be taught at the preschool level. In other words, we need more information on the various methods which could be used to teach the preschool child so that he can master reading skills more efficiently. Similarly, we need to define which method would enable the child to master a particular reading skill most efficiently.

There is also disparity in our knowledge about the instructional materials through which each reading skill should be taught. In short, what are the various instructional materials which could be used to teach the preschooler so that he can master reading skills more efficiently? Which instructional material would enable the young child to master a specific reading skill most efficiently.

Another area about which our knowledge is severely lacking concerns the sequence in which reading skills should be taught to the preschool child. To be more precise, given a series of reading skills to be taught to the preschool child: (1) what is the order relation or dimension underlying these skills?, (2) which of these order relations can be altered?, and (3) if the order relations of these skills can be altered, what sequence would be most conducive to most efficient mastery of these skills?

Finally, our knowledge concerning organization for preschool reading instruction is close to nil. Since research has only scratched the surface on this important area, we should make every attempt to determine the most effective procedures for deploying staff and facilities in order to create an environment most conducive to the preschool child's mastery of reading skills.

Of course, information on the above areas can only be provided by an enormous amount of tedious and systematic research. Investigators exploring the efficacy of formal preschool reading instruction have been less than systematic in their research. Consequently, the answer to the question "how effective is formal reading instruction at the preschool level?" must be answered ambiguously. In many situations such instruction is definitely profitable. In other situations it is not. We just do not have the information available at this time which must serve as the knowledge base for answering this question.

Now, we will attempt to answer another intriguing question: Is formal preschool reading instruction economical? If early reading instruction contributes to the reading success of children, it should reduce the need for subsequent remedial reading instruction. From this perspective, early reading instruction might be viewed as an investment.

Unfortunately, no definitive evidence has been reported attesting to the relationship between early reading instruction and the prevention of reading disability or to how much might be saved by such instruction. Clearly, what is sorely needed is cost-benefit analysis research. Until such research is conducted, the answer to the previous question must be purely speculative. Parenthetically, we might also add that cost-benefit analysis research would probably provide the best information for making decisions concerning the kind of preschool reading instruction local education agencies might impose on children. From the review of the research, it will be remembered that most all types of preschool reading instruction seem to be effective at one time or another.

A perennial red herring in the literature on preschool reading instruction is whether such instruction has an adverse effect on the affective behavior of young children. At least this is the criticism most often raised by critics of preschool reading instruction. It is this writer's conclusion that this criticism is rather passionate, stemming from subjective opinion rather than objective observation. As a matter of fact, the preponderance of information available on the subject indicates that preschool reading instruction has a neutral effect on affective behavior. This should not be interpreted to mean harmful effects are not possible, however. We need much more research on this question.

What evidence is there that a child who truly learns to read prior to first grade will achieve better in reading during later years? The obvious answer to this question is that there is very little evidence. As noted earlier, most researchers discontinue their research after children enter first grade. As a result it is virtually impossible to provide a meaningful answer to this question. The Denver Study, however, is an exception. It will be remembered that the Denver Study revealed that children maintain reading gains through grade six. Other than this study, longitudinal research has just not been done.

To what extent is there evidence that formal preschool reading instruction is sufficiently effective that its practice should be widespread in kindergartens, nursery schools, and other so-called preschool education environments? Given the situation where one strongly advocates preschool reading instruction, the answer to this question would still have to be that there is very little evidence. The main reason for this point of view is the fact that most schools are simply not prepared to take advantage of the early reading achievement children make in preschool. In more cases than not, this situation could be obliterated by in-service education. Until schools are ready to respond appropriately to children who learn to read early, there is really no reason for such instruction to be widespread.

What about preschool reading instruction through educational television? It is our conclusion that it should be encouraged for a number of reasons. First, the cost is not prohibitive. Second, it reaches great numbers of children. Third, it reaches children at all socioeconomic levels. Fourth, children seem to enjoy it. Last, the instructional content of programs such as Sesame Street is available for analysis by educators. Consequently, there should be no problem for the schools to blend first grade content with the content of preschool television.

What about the role of teacher aides and parents in the preschool reading program? The answer to this question is obvious. These people, if used properly, add to the success of the preschool reading program. Moreover, when these people are used, the community is involved.

Briefly, then, we have attempted to present a dispassionate review of the literature on preschool reading instruction. No doubt, the proponents and opponents of preschool reading instruction would like to provide rejoinders to our review and conclusions. Since it is not possible for them to reply, we would like to make two statements. First, negative criticism of formal preschool reading instruction is invalid so long as the social, emotional, and creative potential of the children involved is maintained. Second, negative criticism of formal preschool reading instruction which does not force children in the direction of acquiring reading skills for which they have not fulfilled the prerequisites, and which does not disregard the social, emotional, and creative potential of the children, is not valid.

Chapter 3

INSTALLING A PRESCHOOL READING PROGRAM

Administrators of today are taking greater responsibility for implementing innovative instructional programs, particularly preschool reading programs. The purpose of this section is to provide the administrator with information on installing a preschool reading program. Information on the following topics is essential if a preschool reading program is to be successfully implemented: (1) parameters of the local education agency, (2) procedures for observing innovative preschool reading programs, (3) information on evaluating the effects of preschool reading instruction, and (4) knowledge of innovative preschool programs offering reading instruction.

Parameters of Preschool Reading Instruction

Prerequisite to making any decisions with regard to implementing a preschool reading program, the administrator should first determine the parameters of his local situation. The term parameter is broadly used here to describe classes of variables which can be used to make decisions about how well a particular preschool reading program might be transported to a local situation. In other words, the administrator needs information which will reveal to him the degree to which the program being considered will fit his local situation. Among the parameters the administration should be concerned with are: (1) characteristics of the preschool population, (2) characteristics of teachers and other staff, (3) organization of the preschool reading program, (4) philosophy undergirding the preschool reading program, (5) community involvement, (6) length of the preschool reading program, (7) physical facilities, and (8) costs.

The following descriptions of the above parameters are not exhaustive. They are merely intended to suggest guidelines for defining the local situation and for reviewing preschool reading programs which the administrator might be considering.

Characteristics of the Preschool Population. This parameter deals with the nature of the preschool population the local education agency serves. Examples of variables included under this category are: age, sex, socioeconomic level, ethnic group, urban or rural students, physical and mental health, and the like. As can be seen, this is a very important parameter for a number of reasons. For example, a number of preschool reading programs are now in existence which were designed for specific populations. Therefore, it is more than possible that a preschool reading program which has been successful for one population may not be appropriate for another. Too often, this writer has witnessed preschool reading programs designed for disadvantaged populations being used with advantaged populations. One might well question the impact such a mismatch between program and population might have on young learners.

Characteristics of Teachers and Staff. Under this parameter are teacher and staff qualifications, descriptions of teacher roles, experience, attitudes and beliefs regarding preschool reading instruction, and teacher recruitment. To illustrate the importance of this parameter, one might consider the fact that some preschool reading programs are comprised of very structured instructional packages. For such programs, the teachers prior experience may not be important, as much planning has already been done for her. On the other hand, her belief system must be compatible to formal and structured preschool reading instruction. In other cases, the preschool reading program might offer explicit objectives for reading instruction, leaving the responsibility of planning learning alternatives for children to the teacher. In this case, the teacher's prior teaching experience might be an important variable to consider.

Organization of the Preschool Reading Program. Included under this variable are important items such as staff deployment, organization of reading activities, deployment of materials, whether instruction is individualized, how children are grouped for reading instruction, etc. In short, these variables might be looked upon as the preschool reading curriculum.

Philosophy Undergirding the Preschool Reading Program. This parameter refers to the school of thought followed by the reading program. Of special interest here is the learning theory which serves as a framework for instruction. Some examples of preschool reading programs displaying diverse philosophy beliefs range from formal programs such as the Denver Project (using workbooks), the Salt Lake City Project (using SRA's DISTAR program), and the Cypress, California Project (using Open Court's Correlated Language Arts Foundation Program) to informal programs found in Montessori Schools, and traditional kindergartens. Indeed, one whose philosophy is contrary to formal reading instruction would want to pay particular attention to this parameter.

Community Involvement. This describes the role of the local community in making decisions concerning the preschool reading program. Examples of other important variables under this heading are: community education, degree of community involvement in the project (volunteers, teacher aides, etc.). The importance of this parameter can be easily understood when one considers the fact that the longevity and support of most preschool reading programs is usually determined by the degree and extent to which the local community is involved.

Length of the Preschool Reading Program. Variables relevant to this parameter include length of the school day and number of school days per year. As might be expected, some preschool reading programs call for daily reading instruction. Others alternate reading instruction with other subjects. And, in some cases, reading instruction is provided during the last semester of the kindergarten year.

Physical Facilities. Under this heading are included variables such as the amount and type of space needed for reading instruction. Similarly, the size of classrooms is also important. For example, ungraded or open classrooms have space requirements that differ greatly with programs employing programmed instruction.

Cost. The last, and probably most important parameter, refers to the actual cost of the preschool reading program. Examples are the actual cost of materials, cost of physical facilities, cost of maintaining the desired teacher to pupil ratio, and cost of staff training.

The above parameters, and their descriptions are not meant to be exhaustive, but merely to suggest variables which should be considered in formulating guidelines for developing or reviewing preschool reading programs.

Ideally, the administrator would consult his professional staff as he begins to identify information for input into definitions of the above parameters. Certainly, there will be great argument concerning the philosophy which should be adhered to in a preschool reading program. Likewise, consideration must be given to the children to be served by the program.

Once parameters have been defined, the administrator has information in hand which will enable him to make responsible decisions. He is then ready to visit, observe and consider a preschool reading program for adoption to his local situation.

Procedures for Observing Preschool Reading Programs

At the start, we would like to point out that the selection of a preschool reading program from a mere written description is very unwise. The program should be selected after a number of on-site visits have been made and information has been collected and reviewed.

For his first site visit, the administrator should request that an itenerary be planned for him. Included in his itenerary, he should request a briefing by the project staff, visits to classrooms, and informal interviews with teachers, children, and parents. Before returning to his local site, the administrator should obtain written and/or audio-visual material to use in discussing his visit with his staff. If at all possible, it would also be desirable to have staff members from the program being considered visit the local education agency. In this manner questions of immediate interest can be answered.

After a discussion of his first site visit, the administrator and his staff may or may not be interested in the particular program. If, however, interest runs high a second site visit should be made by the administrator and members of his staff. Included in this visit should be supervisors, teachers, and parents. The purpose of the second visit should be to collect detailed and accurate information on the project.

Guidelines for Observing Preschool Reading Programs. The following guidelines are intended to serve two basic purposes: First, they are designed to aid the administrator interested in observing early reading programs by providing a fairly comprehensive framework against which the components of the various programs may be evaluated and compared. Secondly, they may assist the administrator in identifying the basic components and considerations which will be involved in establishing their own early reading program.

Used as a checklist, the guidelines consist of three types of statements or questions which must be responded to: (1) Descriptions: the observer must compile information from his observations and/or his interviews with program personnel and respond in narrative form. It is recommended that these responses be written on a separate sheet. (2) Checklists: most of the items on this form ask the observer to check any or all responses to a particular statement or question. (3) Rating on a continuum: several items ask the observer to respond to a statement by indicating his observation on a continuum between two extremes.

I. Preschool Reading Program Goals and Objectives

A. General reading goals:

___ Mainly informal readiness (social and cultural experiences

___ Formal readiness program with provisions for beginning reading (direct instruction using published reading material)

___ Emphasis on developing actual reading skill (readiness assumed)

B. Degree of specificity of reading readiness and/or reading objectives.

Very explicit ___:___:___:___:___ Global, general
(behavioral definitions) (loosely defined)

Instructional sequence ___:___:___:___:___ Instructional sequence planned
predetermined by teacher

C. Objectives expressed in terms of:
(Check as many as apply)

1. Teachers and other adults

___ Disseminators of knowledge
___ Sources of reinforcement (rewards, knowledge of results)
___ Guides to children's learning
___ Models with which to identify
___ Other (specify)

2. Materials and equipment

___ Facilitate lesson and drill sessions
___ Serve as self-correcting guides to learning
___ Other (specify)

D. Of the reading goals and objectives, which are considered most important by the on-site team? By the observer?

E. What is the expected time span for attaining the goals and objectives of the program.

1. ___ Time span not stated
___ Three months
___ Six months
___ One year
___ More than one year (explain)

2. ___ Time span is same for all goals and objectives
   ___ Time span varies for all goals and objectives

3. ___ Time span same for all children
   Time span varies for different groups of children (explain)

II. Principal Components and Procedures of the Preschool Reading Program

A. Assessment of reading readiness and/or reading achievement:

1. Time of assessment

   ___ On entry into the program
   ___ Continually during the year
   ___ At year's end

2. Type of assessment

   Informal, ___:___:___:___:___ Formal (standardized test)
   (Teacher-made test)

   Haphazard ___:___:___:___:___ Carefully planned

3. Assessment based on:

   ___ teacher judgment
   ___ work samples
   ___ work completed
   ___ checklists
   ___ standardized tests
   ___ observation schedules
   ___ student conferences
   ___ Other (specify)

4. Assessment performed by:

   ___ student-self evaluation
   ___ teachers
   ___ aides
   ___ parents
   ___ specialists
   ___ supervisors
   ___ Other (specify)

5. Criteria used:

   Narrow range___:___:___:___:___ Full range

6. Purpose of assessment:

   ___ as integral part of instructional program
   ___ feedback
   ___ for periodic reporting only (e.g., to parents)

B. Reading materials and equipment

1. Description of kinds of reading materials and equipment used in the program:

___ specifically programmed
___ appropriate for independent pupil use
___ requires adult direction and supervision

2. List reading materials and equipment most frequently used.

C. Use of time in program:

Highly structured schedule ___:___:___:___:___ Flexible schedule

___ blocks of time designated for specific activities (explain)

D. Utilization of space:

___ single classroom
___ areas of classroom designated for reading and other activities

E. Reading activities:

1. Rank, in order of importance, the main sources of structuring for the children's activities which are intended to contribute most toward the achievement of the reading program's objectives:

___ materials and equipment accessible to students for their use
___ direct instruction by teacher
___ direct instruction by other adults
___ teachers as guides
___ interaction with peer group
___ Other (specify)

2. Who chooses reading activities and materials:

___ children ___ varies ___ teacher

3. Degree of relationship between reading activities

High ___:___:___:___:___ Low

4. Degree to which reading program can be correlated with other areas of instruction:

High ___:___:___:___:___ Low

F. Provisions made for individual differences and backgrounds of children:

1. Amount of individualization:

Very little ___:___:___:___:___ Highly individualized

2. Individualization achieved by: (check all that apply)

   ___ student choice
   ___ teacher choice
   ___ Other (specify)

3. Rank, in order of importance, the main means of achieving individualization:

   ___ materials available
   ___ level of materials
   ___ pacing
   ___ grouping
   ___ tutoring

III. Administrative and Organizational Requirements

A. Community involvement:

1. Degree of community involvement

   Direct___:___:___:___:___ Indirect

2. Kinds of community involvement (check all that apply)

   ___ selecting program
   ___ selecting objectives
   ___ decision making
   ___ mainly advisory
   ___ as part of staff (teachers and/or aides)
   ___ as volunteers

B. Types and qualifications of personnel

1. Type/Education Level

	M.D. Ph.D.	M.A.	B.A.	H.S.	Other	Staff-Child Ratio
Supervisor/ adviser	___	___	___	___	___	___
Reading specialist	___	___	___	___	___	___
Early Childhood Specialist	___	___	___	___	___	___
Teacher	___	___	___	___	___	___
Aide/assistant	___	___	___	___	___	___
Volunteer	___	___	___	___	___	___
Psychologist	___	___	___	___	___	___
Other (designate)	___	___	___	___	___	___

2. What amounts and kinds of experiences are parts of the desired qualifications for each of the above types of personnel?

3. What personal qualifications are sought in each of the types of personnel?

4. What number of children can be served effectively by one staff member in each of the above categories?

5. How is the staff involved in planning and implementing the reading program: (check all that apply)

___ selects the program to be implemented
___ plans the process of implementation
___ develops policy positions
___ develops program materials and selects equipment
___ develops and implements evaluation procedures
___ develops dissemination procedures
___ Other (specify)

C. Space and time requirements:

1. Describe type or room or other space needed for reading instruction:

2. Time requirements:

___ full school day
___ one-half school day
___ full school year
___ Other

D. Staff development:

1. List the knowledge and competency requirements for supervisors:

2. List the knowledge and competency requirements for teachers:

3. List the knowledge and competency requirements for aides:

4. In-service training required for:

_____ teachers _____ aides _____ others

5. Resources required for in-service

___ local supervisors
___ outside consultants (early childhood and reading
___ kits of materials and other packages
___ film and video equipment

6. Timing of in-service:

___ daily ___ during working hours
___ weekly ___ after working hours

E. Costs for installing and maintaining the reading program (based on number of children):

___ staff
___ in-service training
___ equipment
___ reading materials
___ supervision
___ evaluation

F. Time required to implement the preschool reading program:

___ community involvement and planning
___ staff involvement and planning
___ in-service education

To sum, information of the kind outlined above should be collected during the second on-site visit. After the information has been compiled, it can be used as a sound knowledge base for making decisions concerning whether to adopt a particular preschool reading program.

Evaluating the Preschool Reading Program

Whether evaluation is a formal component of the preschool reading curriculum, some sort of evaluation should take place. It may be as informal as a discussion among administrators, teachers, and parents as they identify and describe what they think is, or is not, happening in the reading program. On the other hand, it may be formalized to the extent that data is collected by administrators, supervisors, and teachers to determine the progress the reading program is making. In any event, some form of evaluation should take place. Hopefully, the evaluation is an integral part of the total preschool program, regarding its objectives, procedures, and criteria for determining the degree to which objectives are achieved. Thus, decisions regarding the objectives of the program, procedures, and criteria should be a part of the total planning for the reading program, as opposed to an evaluation conducted at the end of the year.

The purpose for evaluating the preschool reading curriculum is to gather relevant data which supports the decision making process and determines the degree to which objectives of the curriculum have been reached. Presumably, the results of the evaluation are made public to defend decisions made during the program.

The fundamental impediment to effective evaluation of preschool reading programs is the lack of a conceptual understanding of the evaluation process on the part of most administrators. Indeed, if responsible decisions concerning the management and administrative efficiency of the preschool reading program and the degree to which the program brings about educational and attitudinal change are to be made, some conceptual framework must be employed to gather and interpret data.

The literature reveals that a number of theoreticians in education, especially in the area of evaluation, have been concerned with the problems of evaluation. Bloom (1969) for example, distinguishes between summative and formative evaluation. Summative evaluation identifies terminal inspection of objectives to determine whether progress has been achieved. Formative evaluation, on the other hand, is the continuous process of collecting relevant data to make decisions while the project is in progress.

Provus (1969) provides a model which describes evaluation as a process of seeking harmony. The process includes:

1. Agreeing upon program standards
2. Determining whether a discrepancy exists between aspects of the program
3. Using discrepancy information to identify the weaknesses of the program

Guba and Stufflebeam (1970) view evaluation as a process involving four basic decisions: "Planning decisions specify major changes that are needed in a program." These decisions commonly relate to goal setting and goal review processes. "Structuring decisions specify the means to achieve the ends." These decisions relate, typically, to program objectives, priorities, and alternatives. "Implementing decisions are those involved in carrying through the action plan." These decisions represent the continuous input of information relevant to program progress. "Recycling decisions are those which are used in determining the relation of attainments to objectives." These decisions provide answers to the questions "do we continue or do we alter our course?"

The above decision types also identify the following four stages of program evaluation critical to effective management:

1. Context evaluation. "The major objective of context evaluation is to define the environment in which change is to occur, to depict unmet needs, and to identify the problems that result in needs not being met."

2. Input evaluation. "The major objective of input evaluation is to determine how to utilize resources to meet program goals."

3. Process evaluation. "Process evaluation is needed to provide periodic feedback to project managers and others responsible for continuous control and refinement of plans and procedures."

4. Product evaluation. "The objective of product evaluation is to measure and interpret attainments, not only at the end of a project cycle but as often as necessary during the project term."

Although the above review does not represent an exhaustive review of the literature or all the theoretical positions which explicitly or implicitly deal with the concept of evaluation, it does provide some insights into the information available which could be applied to current problems in evaluating the preschool reading program.

Criteria for Evaluation. As mentioned earlier evaluation matches data collected to a model and determines the degree to which they fit. It is necessary to decide upon what variables in the instructional program will be used to define the model and the program. The variables and objectives chosen represent the criteria used for evaluation. Listed below are examples of appropriate variables which may be used to define models and programs:

1. Expected outcomes in terms of changes in children's reading readiness as a result of being exposed to the preschool reading program.

2. Expected outcomes in terms of changes in children's later reading achievement as a result of being exposed to the preschool reading program.

3. Expected outcomes in terms of affective behavior as a result of being exposed to the preschool reading program.

4. Procedures for implementing and managing the preschool reading program:
    a. Desired behaviors of teachers
    b. Descriptions of materials and how they will be used
    c. Physical facilities needed
    d. Desired community involvement

Implementing the Evaluation. As suggested earlier, the purpose for evaluation is to determine the extent to which the objectives of the program have been accomplished. Ideally, this means that data must be collected which enables the administrator to justify his decision to continue, terminate, or modify phases of the preschool reading program.

The purpose of the evaluation determines the time schedule for collecting information. In most cases, however, data is collected according to one of the following schedules:

1. Data collected at one time period, usually after the completion of the preschool reading program

2. Data collected at two points in time, usually immediately prior to the beginning of the preschool reading program and immediately after the program terminates

3. Data collected periodically, usually at critical points during the process of the preschool reading program

There are points of strength in using any of the above schedules for data collection. First, data collected at one time period allows one to compare the degree to which the program is meeting, or has met expected objectives. Second, data collected at two points in time enables one to make comparisons of observed and expected changes in behavior. Third, data collected at critical points during the project provides the opportunity to observe changes and make decisions at critical intervals in the program. Parenthetically, it might be added that the later schedule is the most desirable since it allows one to make observations and decisions during the entire process of the program as opposed to making decisions after the program completes a full cycle.

Another consideration which must be taken into account in implementing an evaluation is the instruments used to gather information. A frequently occuring problem in program evaluation is concerned with the validity and reliability of the instruments used to collect data. Briefly, the instruments must have a demonstrated relation to the variables being considered and measure them accurately. Of course, the purpose of the evaluation and the variables being considered dictate the kinds of instruments one should employ. Listed below are categories and types of instruments generally used in evaluation:

1. Instruments used for determining changes in behavior
    a. standardized tests
    b. informal tests
    c. observation schedules
    d. interviews
    e. questionnaires
    f. rating scales
2. Instruments used to determine the effectiveness of personnel
    a. observation schedules
    b. questionnaires
    c. rating scales
    d. interviews
3. Instruments to determine the appropriateness of facilities
    a. observation schedules
    b. rating scales
    c. questionnaires

4. Instruments used to determine the degree and quality of community involvement
    - a. interviews
    - b. questionnaires
    - c. observations

To summarize, in planning and implementing the evaluation of a preschool reading program, one must consider the purposes of the evaluation, variables to be considered, time schedules for data collection, and instruments to collect data. Moreover, the evaluation itself should be monitored in order to insure that as the objectives of the program change, there is a corresponding change in the procedures for evaluation.

Sources of Information on Evaluating Preschool Reading Programs. Although there are a number of available sources on evaluation, very few deal with the evaluation of preschool programs. An exception, however, is the Handbook on Formative and Summative Evaluation of Student Learning written by Benjamin S. Bloom, J. Thomas Hastings, and George F. Madaus and published by McGraw-Hill Book Company. This distinguished book devotes over 100 pages to the evaluation of preschool instruction. This writer urges that every administrator concerned with evaluating preschool programs consult this valuable source.

In addition to the above source, the reader might consult groups of people who are actively involved in evaluating preschool programs. The following groups are offered as contact points for evaluative services for preschool reading programs:

Dr. William E. Blanton
Dr. J. Jaap Tuinman
Office of Reading and Language Studies
Reading Program/Institute for Child Study
Indiana University
Bloomington, Indiana 47401

Center for the Study of Evaluation
Graduate School of Education
University of California at Los Angeles
Los Angeles, California

Tests for Measuring Readiness and Early Reading Skills. The reader seeking in-depth information on tests designed to measure readiness and early reading skills is referred to the following sources:

CSE-ECRC Preschool/Kindergarten Test Evaluations. Ralph Hoepfner, Carolyn Stern and Susan G. Nummedal (Eds.). Los Angeles: UCLA Graduate School of Education, School Evaluation Project, Center for the Study of Evaluation, 1971.

Tests of Reading Readiness and Reading Achievement. Roger Farr and Nicholas Anastasiow (Eds.). Newark, Delaware: International Reading Association, 1969.

In addition to the above sources, publishers of tests for measuring readiness and early reading skills are presented in Appendix A.

Promising Preschool Programs Offering Reading Instruction

The following programs offer innovative approaches to preschool education. In more cases than not, reading instruction is a component of these programs. We would like to point out that there is no significant pattern of preschool reading instruction among these programs. In fact, the reading instruction offered ranges from highly structured reading lessons provided with commercially produced materials to the informal language experience approach. Similarly, reading instruction is found to be configurated within a number of administrative organizations. For example, preschool reading instruction is found in schools grouping children according to the ungraded classroom procedure, integrated school day, open classroom, and the like. The administrator, then, can consider a number and variety of preschool reading programs for the preschool population he serves.

The Cypress School District at Cypress, California serves approximately 7,000 children in 12 different schools. Children range in grade from kindergarten to grade six.

In 1967, Cypress' first grade classes became involved in a year long pilot program in reading. The pilot program's purpose was to utilize the Open Court Correlated Language Arts Foundation Program and to judge the effectiveness of the program. The pilot program was a success and the Open Court Program was put into kindergarten first, second, and third grades of the district.

The Open Court Program is an academically-oriented instructional program that attempts to isolate the elements that will make five year olds self-confident, eager, and happy to learn. The program focuses on skills that will benefit all children and lead to some intrinsic reward motivation, skills which all children can learn so that they will develop confidence in their own abilities, skills which require a minimum effort by the teacher and that can quite often be taught by self-correction, and skills that are basic to beginning reading and success in later reading.

Subject matter of the Open Court Program introduces kindergarteners to children's literature that stimulates curiosity about all other subjects, that shows the interrelationships among subjects, and that lends itself to stimulating classroom discussions. The program utilizes a strong phonics base for instruction, including ear training and spelling instruction. This enables children to establish word recognition skills early in their academic career--often before the end of first grade. The program also places a great deal of emphasis on comprehension and creative writing.

Total class presentation of new concepts and skills followed by total class discussion is used in the Open Court Program. This is then followed by small-group and individual work. The program is particularly effective for conceptual development and for learning beginning reading skills.

A sequel to the program is the Open Court Breaking the Code program which is designed for upper elementary grades. This program has had very good results in improving reading ability and extending the child's ability to express himself in writing. Results of the program used with kindergarteners and first graders showed that these students achieved a minimum score of one year and eight months higher than controls using basal readers. The measure used to determine achievement was the Wide Range Achievement Test.

Strengths of the program lie in the teaching techniques and instructional strategies which are used with all materials in the Open Court classroom organizational plan.

The Kramer School project in Little Rock is a combined education and day care project serving children who range in age from six months to 12 years. A total of 236 children from families whose annual incomes are $3,000 or less attend Kramer; 59 percent are black, and 41 percent are white. The primary goals of the program are to help each child acquire a love for learning, the ability to adapt to group experiences, master the rudiments of reading and mathematics, and enjoy his childhood years while he is making progress toward becoming a responsible citizen.

Instruction in the rudiments of reading and mathematics is centered around materials like SRA's, DISTAR reading program, the Peabody Rebus Reading Series, and Montessori materials. Concentrated activities are carried on before lunch, while physical education, speech, and ecology are reserved for after lunch. Afternoon field trips are a part of the curriculum for the older children in the program.

Children in the program at Kramer School are divided into various levels, with those at the first level given major emphasis on the program. These children visit the Learning Resources Center and Libray three times a week for diagnoses and remediation of learning difficulties. Other children attend the center twice weekly. Activities at the Center are varied every 15 minutes during the hour-long visits, and include concentration on perceptual activities, auditory discrimination, and listening activities designed to increase the child's attention span. While children are participating in the center's activities, their classroom teacher is given the opportunity to systematically observe them in these situations so that she might better plan activities for them in the classroom.

The Kramer School project features in-service training sessions for its staff that are held twice weekly. At these 50 minute sessions the philosophy of the program, teaching techniques, research projects, and methods of observation are discussed.

To date, the only evaluation procedure that has been completed is that of the Stanford-Binet IQ Test on an experimental and control group of preparatory school children (preschoolers) in the fall of 1969 and spring of 1970. The test showed IQ gains of 15 points for the experimental group, while the controls who were home with their mothers, gained only two points. Gains are also being measured on the basis of several other standardized tests, but these evaluations have not yet been completed.

Kramer School is a special facility operating within the Little Rock Public School System. The school system provides the building, administration, faculty, cafeterias, and operating and maintenance funds for the school age children, while the Department of Health, Education, and Welfare and the University of Arkansas provide funding for research, day care, and preparatory education portions of the center. Cost per child of the program is about $1,500 per year, in comparison to the $586 the Little Rock School District normally spends per child per year.

The Exemplary Center for Reading Instruction (ECRI) at Salt Lake City serves children in grades K-12. The center itself, provides remediation of reading difficulties for about 45 children, but the center serves primarily as a teacher-training institution.

ECRI is constantly looking for new and innovative methods of instruction, and is involved in a great deal of research to achieve this end. At present, ECRI is emphasizing kindergarten and first grade programs in which SRA's DISTAR reading program is being utilized. According to research studies conducted at ECRI, the more responsive the child is, the better learner he is. With this in mind, ECRI personnel have developed an instructional program that requires kindergarteners and first graders to respond many times during a given class period.

Perhaps the strongest feature of the ECRI program is its teacher-training function. ECRI works directly with two local school systems, but also serves a resource facility for school systems throughout the Southwest. Workshops are conducted all year long at the center, at nearby schools, and at schools throughout the state. In addition, direct teacher training programs that teach teachers at the center and send demonstration teachers out to the schools are conducted. Interested parents are also provided with in-service training.

ECRI is funded at a rate of $159,000 a year primarily by two nearby school systems that contract for its services, leaving ECRI governed by a five man board. Two board members are from each of the school districts and one member is from the State Board of Education.

At Carle Place, New York beginning reading instruction is based on the tenet that children of this generation are prepared to read well before they enter school and are past the stage of readiness when they begin their formal education. This might not have been true 15 years ago, but today with children being exposed to a great deal of television and easily obtained reading materials, many children demonstrate surprising skills related to reading in kindergarten.

In this particular program, children are assumed to be past the readiness stage in kindergarten, and phonic instruction in reading is begun almost immediately. A pilot program which had striking results convincing school officials of the value of introducing reading in kindergarten. Children are now going into the first grade with reading levels up to grade three.

After convincing the teachers of the value of such a program, they were taught to teach reading via the phonics method. No published materials are used in the program. All materials are a compilation of teacher-made materials. Teachers are pleased with the program and feel that they are teaching academics rather than socialization skills.

Changing the kindergarten program also involved convincing parents of the value of such a program. The school A-V director made a film that depicted the children as they progressed in reading ability. This seemed to convince parents; and many parents have begun working with their children at home, trying to improve reading achievement.

Reading is taught for about 15 or 20 minutes each day. Motivation has been supplied by fascinating audio-visual aids, pictures, and sketches. Children who do not grasp the material in the program are never pushed into it; they are always given the amount and kinds of work they can easily handle. Grouping is used a great deal in providing for individual differences in learning rate.

The Marks Meadow School at Amherst, Massachusetts serves 100 kindergarten children. The children are predominantly middle class, coming from families connected with the University of Massachusetts.

Through the use of materials developed specifically for the program by the staff, the program is attempting to create an ungraded version of a combination kindergarten-first grade, which rejects any notion of lock-step approaches, teacher-centered approaches, and grade and ability grouping. The guiding principles of the program are that children learn at different rates, and that they learn something only when they are ready for it.

The curriculum is divided into five categories: mathematics, scientific observation, creative arts, writing, and reading in all subject areas. Observations of the children's overt behavior are analyzed frequently. The program does not emphasize reading as the only route to knowledge--all learning achievements are encouraged and praised.

Reading instruction in the Amherst program covers a wide range of activities. The program has staged general areas in reading that each child will be working at, and specific objectives in each general area. Work with vowels, consonants, and structural analysis is used with those children requiring help in word recognition. Reading itself is approached by work in listening comprehension skill, silent reading skill, oral reading skill, oral reading comprehension, and silent reading comprehension. Areas like creative expression and motor skills also receive a great deal of attention. Teachers in the program get together about once a week to plan and have team meetings where techniques, methods, and materials are discussed.

Formal evaluations of the program are underway at the present time. These evaluations are utilizing the Metropolitan Reading Readiness Test, the Frostig Test of Visual Perception, and the DeHirsch Reading Test. Evaluations of the individual children are for the most part informal statements telling the parent of the child's progress.

The school is a laboratory school for the University of Massachusetts, but is supported by public school funds with the city of Amherst taking over more of the cost each year. At present, the cost estimate per class is between $2,500 and $3,000 for the kindergarten, and around $500 more for the combined kindergarten and first grade program. Title III funds are also being utilized.

The Prereading Skills Program now under development at the Wisconsin Research and Development Center for Cognitive Learning at the University of Wisconsin is designed to diagnose and overcome deficiencies in prereading skills at the kindergarten and preschool levels. The program was developed on the assumption that reading is not a single skill, but a complex of skills which can be analyzed and broken down into various component skills. The program also assumes that an individualized method of teaching these skills would be required for efficient instruction. Skills selected for investigation include the visual skills of attending to letter order, letter orientation, and word detail, and the sound skills involving sound matching and sound blending. These skills are considered to be the basic prerequisites of beginning reading.

For each basic skill, the program contains a sequence of games and other activities that lead children from a simple application of the skill to a more complex and abstract form. With sound matching, for example, picture-sound pairs are introduced using pictures, narrative stories, and songs. Once the sound is learned, pictures are utilized in sound matching exercises. Then the pictures are gradually removed from instruction so that children will eventually match sounds in auditory forms only, without the aid of visual props.

The Wisconsin program is attempting to insure that once a child has gone through the program, he will be ready for formal reading instruction and will experience little difficulty in acquiring initial reading skills. Once through the program, children are expected to perform such operations as matching letters, letter strings, or printed words, and to take into account the order of the letters and word configuration in their word attack. Children should also be able to match words on the basis of constituent sounds and to decide whether or not a given word contains a particular sound, and to blend sounds into real words, using letters as stimuli for the sounds. Secondary skills within the program include the teaching of concepts, a small sight vocabulary, and certain social behaviors.

The complete program includes a teacher's handbook and resource file, visual and sound schedules, games and materials for teaching each separate skill and a record keeping system. Built in systems of assessment are also provided. Practice sheets and skill tests allow the teacher to chart each child's progress and plan additional instruction for him.

The DOVACK program in Monticello, Florida serves black children exclusively, about 75 percent of whom are from poverty families. Children in the program are housed in two different schools, one school serving kindergarten through fourth grade youngsters, and the other serving fifth through twelfth grade children.

DOVACK is a computer-assisted language experience approach which allows children to create their own reading lessons. Because black children speak an Afro-American dialect, traditional approaches to the teaching of reading have limited success. DOVACK tries to overcome this difficulty by enabling students to start with the concepts and vocabulary they already know.

In the DOVACK program, children are encouraged to become familiar with the equipment needed to implement the program. Children, for instance, dictate their own stories on dictaphone belts, and are later furnished a computer printout of the story. With each story, the computer keeps a record of each new word the child uses, thus a running record of a child's vocabulary development is created. Still later, the dictated stories are transcribed to standard English for the child so that he might see how his own dialect differs from standard English. The DOVACK approach accepts the pupil as the one who controls the learning environment and encourages independence, self-reliance, and self-sufficiency on the part of the learner.

Specific objectives of the program are to develop skill in manipulating equipment and materials, to develop favorable attitudes toward reading, to develop proficiency in word recognition, word attack skills, and general reading achievement, and to become independent and self-pacing. Classroom activities are geared to the achievement of these specific objectives, but the child determines the content of the lessons and his rate of achievement himself. In-service training sessions attempt to instill in the teachers the overall philosophy of the program.

Testing is underway to determine the effect of the program on the children, but no specific results are yet available. Staff members report, however, that students are becoming more independent as learners and are taking books home to read. Outside observers have indicated there are noticeable signs of progress toward achieving the major student objectives of the program.

The two schools in which the program was housed were part of the local school system which provided the usual expenditure of $658 per child per year. The cost of the program was $770 per child per year over and above the normal expenditure.

The Interdependent Learner Model at Public School 76, Harlem, New York serves kindergarten through second grade students, all of whom are from minority groups. Most of the children are from low income families on welfare, and racial composition is 99 percent black, the remainder being Puerto Rican.

General goals of the program include making the student an independent learner and giving him a good self-image. Through the use of PAT materials (Performance Aids in Teaching), which contain 60 structured lessons that teach reading skills, various programmed materials, and the Bank Street readers and workbooks, the program concentrates on beginning reading and language arts skills.

The program's approach is to use language to solve problems, explain the problem solving process, and so on. Other methods such as role-playing, and positive reinforcement are utilized by teachers and aides to promote learning and to enhance the self-image. Dr. Gotkin of New York University, who designed the program, utilizes a beginning reading method that isolates particular sound and visual units for retention, and then sequences these units correctly.

A one week summer workshop is held and weekly meetings are held during school for teachers and aides. At the weekly meetings, staff members share ideas, discuss current problems related to the program, and watch demonstration teachers present new ideas and techniques.

Informal tests have been given to experimental and control first graders and second graders. A statistical difference was shown when it was found that more experimental first graders were above grade level in reading achievement than controls.

The entire program served 125 kindergarteners and 180 first graders the first year at a total cost of $343,770. or around $1,125 per child per year. The program is federally funded, but still a part of the local school system.

The Hopi Action Council at Oraibi, Arizona serves 400 children from kindergarten through grade three in addition to 140 preschoolers. The program's goal is to supply each child with the basic academic and social skills he needs in order to succeed in school. To attain this broad goal, the three basic skills of reading, mathematics, and handwriting are studied by all students each day, with frequent alternation of "backup" activities.

At the core of the program is an instructional technique called Behavior Analysis which provides for systematic reinforcement of desired behavior as identified in specific learning objectives of the program. In short, the system is one of rewards or tokens which can be exchanged for participation in activities the child likes. The behavior Analysis program was developed at the University of Kansas under the direction of Dr. Don Bushell, Jr.

Every teacher attends a one week training session at the University of Kansas before beginning in the program. Then, during the school year, workshops are held periodically. The Oraibi program utilizes teacher aides in the form of parents. The parents are trained within the program which helps to build a strong bond between home and school and serves to alleviate the language problem at school, since for many of the children, English is a second language.

Pre- and post-tests scores utilizing the Wide Range Achievement Test have been obtained, and although no specific results have been reported for the program, indications are that the program is achieving success. Federal funding of $750 per child per year covers all costs of the program.

The Experimental Pre-kindergarten Program at Community School District No. 3, New York, New York began in 1966 in an attempt to study the effectiveness of preschool programs and to provide needed leadership in this area of concern. This program serves preschool disadvantaged children.

Goals of the program involve creating an appropriate learning environment in which each child, regardless of his background, will experience some measure of success and some sense of competence as a learner. The program also considers long range goals for its students in terms of appropriate "antecedent behavior." Antecedent behavior is a complex, subtle, and long range behavior concerned with many activities. For instance, antecedent behavior for intellectual growth is not mere memorization of isolated facts but the development and pursuit of curiosity. In the realm of antecedent behaviors, listening skills, verbal and non-verbal communications skills, and the like are emphasized.

The program is based on the assumption that each child has his own individual learning style and rate of learning. The program attempts to provide materials and experiences in light of the above assumption. The program design also assumes that children learn best through activity and that they learn best as a result of highly individualized contacts and relationships with adults.

Parent involvement is also stressed in the Experimental Pre-kindergarten Program. Meetings between staff and parents are common, as are activities involving parents, staff, and children.

Reading instruction is approached from the language experience viewpoint. All activities that involve the teaching of reading are based on the experiences of the children. In fact, to insure that children are constantly involved in new experiences, money is provided to the parents for activities involving the child.

The program is now funded by U.S.O.E. and also recieves Model Cities Program aid. The program is reliant on funding to stay in operation.

There are more than 4,500 children from urban and poverty areas in the Hartford, Connecticut Program. At present the program is aimed at children four years old through the first grade, but is to be later extended to second grade children.

The program is based on principles and philosophies that include formal education beginning at age three and mixed-age groupings rather than grade level designations. The program also advocates that students should be combined into various interest centers that are multisensory, multi-instructional, and multidisciplinary, that rewards should be intrinsic success goals, not letter grades or promotion, and that the primary goal should be to maintain an environment that allows each child to achieve and maintain his own success identity.

The specific goal of instruction is to make the learner independent and self-directed. Reading is not stressed unduly in the classroom which is patterned after the work of Montessori and the British Infant Schools. Students are allowed to learn at their own pace through the use of many Montessori materials and materials developed at the center.

The reading instruction is also based on the language experience approach. Within this approach, skills that involve oral language, listening ability, word recognition, oral reading, silent reading, vocabulary development, and writing skills are emphasized. Individual language development progress records are kept on each child. These records allow the teacher to chart the child's progress, follow his progress, individualize instruction for him, and modify instruction when the need arises.

The in-service program of the Hartford program is somewhat novel. Rather than try to teach the teachers and aides what to do within the framework of the classroom, the program requires all teachers and aides to attend a three week session in which they go through the same program their students will be going through. In addition, at the training sessions held before and during the school year, teachers and aides design materials for use within the program.

To date, evaluation has been on an informal basis with the kindergarteners and first graders. Once the second grade classes are implemented, evaluation by standardized instruments will begin.

The entire project is financed exclusively by the Hartford School District. Total cost of the program is $500,000, with materials and equipment costs of each classroom at about $900.

Elizabeth Seawell School at Chapel Hill, North Carolina is an attempt to integrate and develop language arts skills through utilization of all aspects of the curriculum--through reading, math, science, social studies, and the arts. The Seawell School views language development not as a separate entity, but an integral part of the child's ability to develop other skills. This program seeks to help the child relate happenings in his own world, to analyze them, draw conclusions about them, and express what he has learned orally or in written form.

Reading is a primary instructional concern in the Seawell program and is approached through three basic components: word attack skills, comprehension and listening skills, and study skills. Each general skill is composed of many subskills that are sequenced in a logical order so that the child's progress can be accurately monitored and evaluated. Statements of methods that may be used to achieve mastery in the many subskills are clearly outlined.

The stated major goal of the program is to develop a procedure for instant feedback, whereby teachers and project staff members can suggest ways to immediately improve teaching techniques based on their classroom observation and evaluation of performance. In establishing the program, other major objectives were also stated: to assess the impact of a total effort on language development, to improve practical in-service training programs, to cooperate with higher educational institutions in the development of programs, and to cooperate with other agencies in training para-professionals. Additional objectives include developing a materials research center, disseminating results of findings related to the program, and conducting field consultative efforts as a follow-up to the center's training sessions.

Rather than the traditional self-contained classrooms Seawell school utilizes large areas in which children across age and grade ranges meet with teachers. Students are allowed to move about freely to high-interest learning activity centers. These learning centers are provided for students so that they can engage in activities at which they can best experience success.

Other techniques being utilized in this program include team teaching, intern programs, and parental involvement. The program makes excellent use of students and faculty from nearby universities.

This non-structured classroom approach is an attempt to prescribe an educational program on the basis of each child's needs and abilities. Some of the advantages it offers are in helping the child to see relationships between his life at home and his life at school, it offers the child the opportunity to make his own decisions, it offers him more freedom in interaction with peers and teachers, and gives him opportunities to freely communicate his ideas and emotions. In addition, this approach stimulates the child to widen and expand the scope of his imagination, it enriches his experiences, and develops in him favorable attitudes toward school.

Harley Lower School in Rochester, New York serves children in the early grades. This program utilizes an open classroom which is synonymous with the term "integrated day." The integrated day approach views reading as only a part of the child's total language development which results from a continuous interaction of experiencing, listening, speaking, writing, and reading. Harley Lower School attempts to incorporate the teaching of reading into this larger framework of language as it grows out of the child's total experiences.

The integrated day model borrowed heavily from the British Infant Schools. It focuses on the child's interests and experiences which become the initial starting point of instruction. Perhaps this mode, more than anything else, concentrates on providing a rich school environment for the child to discover and explore.

At Harley Lower School, three important components of an integrated language arts program becomes apparent. The first component is a relaxed atmosphere in which children are encouraged to share ideas and experiences. Verbal interaction, the simple ability to communicate ideas and in turn understand ideas that have been communicated, is the first important dimension. A second component of the program is the idea that learning is a total experience and language must be integrated with all areas of the curriculum. A third component of the program is the recognition of stages in the development of the ability to read and write.

The stages of development the child goes through are important for they give the teacher the guidelines to follow in planning instruction for the child. At Harley Lower School, three beginning stages of reading are utilized: the prereading stage, the early reading stage, and the independent reading stage.

During the pre-reading stage the child is perhaps constantly asking the question, "What does this say?" He shows interest in books, words, and letters, and is thoroughly delighted when he learns his first word. The child in this stage enjoys being read to a great deal and often "reads" materials using picture clues or the like. The child in the pre-reading stage becomes more and more adept at expressing himself verbally. Still, the emphasis is on using the child's own language as a basis for his initial reading experiences.

At the early reading stage the focus on words, letter sounds, and symbols becomes greater. Also referred to as the code-breaking stage, the child begins to associate sounds and symbols effectively enough to write letters and words and to attack new words. Writing at this stage becomes a more important vehicle for communication and serves as a way for the child to organize his thoughts.

Finally, at the independent reading stage, the focus shifts from word recognition to word meaning. Simply recognizing the words is not nearly so much of a challenge as before. The real challenge now is what the words say. At this point, reading becomes a tool for the child to explore, discover, and enjoy his world as it is represented in language.

Harley Lower School attempts to make learning to read a natural part of the entire school experience. Language is a natural part of the child's social, intellectual, and emotional maturation and is the means by which the child explores and discovers his environment. It only stands to reason that by making reading just as important and just as useful to the child, he will learn to read.

A new preschool program that shows a great deal of promise is the Karnes Preschool Curriculum. Still in the experimental stages, the Karnes program applies a highly structured lesson plan to language and concept development for kindergarten children.

The Karnes program contains the traditional components of science, math, social studies, language, art, directed play, music and movement, and creative and productive thinking. Each area is dealt with via specific exercises designed to produce specific reactions.

The program, developed at the University of Illinois, is based on the assumption that schools need to overcome the shortcomings of homes where traditional learning values and practice opportunities are missing. Through a very structured approach, the Karnes program features mental and skill development based on specific exercises in order to prepare both inner-city and middle class children for the traditional tasks required in school.

The program utilizes structured lesson plans, structured exercises, a game format that makes use of cards, lotto games, and materials that require specific motor responses, and a built in system that provides for daily diagnosis and adjustment of the child's program.

Evaluation of the program is still underway, but many initial evaluations have been made. Teachers report that by using the program (and the use of classroom aides inherent in the program), they are able to know their children better and consequently design instruction for them more accurately and efficiently. Information on the program suggests that at least one third to one half of the children were ready to be exposed to formal reading by the first of February. The program was uniformly effective in the inner-city schools and most appropriate for the slower and shy (but bright) middle class child, and for the faster middle class children for the first half of the year. In addition, children appear to like the program and teachers and aides report fewer behavior problems than in previous years.

In contrast to the previously mentioned programs which just "offers" reading instruction, Park School at Ossining, New York "guarantees" parents of kindergarten children that 90 percent of their children will be reading at the national level. National levels of reading ability are achieved by formal reading instruction.

Finally, a number of private preschools now offer formal reading instruction. Examples of private schools teaching reading are the Lamplighter School of Dallas, Texas and the Sullivan Pre-School Centers.

Lamplighter School has an enrollment of 485 children ages three to 10. The children are primarily upper-middle class whites served by 37 staff members.

The philosophy of Lamplighter is "to have each child learn how to live his life, and with ever-increasing powers of appreciation, imagination, comprehension, and accomplishment." In fact, the whole concept of Lamplighter is to "keep children feeling good about themselves, to give them self-confidence and help them to be relaxed and flexible." One very unconventional way the staff tries to improve the child's self-image is by greeting each child in the morning with a hug and a smile, and sending him home in the afternoon in much the same manner.

The program itself emphasizes reading readiness and reading instruction. Within the reading program there is a heavy concentration on phonics and programmed materials. In the nursery school, skills like color recognition, shape recognition, categorizing, patterning, visual and auditory sequential memorization, and rote counting are taught. At upper levels of instruction, many of the same kinds of skills are taught, but on a more advanced level. Materials like the Peabody Language Kit, Beth Slingerland materials, and many materials developed at the school are utilized.

The basic skills the children need to learn to read and to progress in reading are taught by using "fun activities." School becomes a place for fun and work, and the two seem to become more compatible with one another. In addition, children who are reading from books are encouraged to experience what they read.

Other techniques used at the school include team teaching, individualized instruction, non-grading, and parent conferences used in place of report cards.

Evaluation of the students' progress is handled primarily by conferences. Three times a year parents come in to speak to staff members about their child's progress. This lack of grades is propagated on the assumption that a child needs a lot of self-confidence before he can effectively learn to compete. Parents are also allowed to observe their children through observation decks, and they receive their child's school work from the previous week throughout the year. Standardized tests are also used in charting the child's progress.

Lamplighter School is not geared to the genius-level child, but children in the program test out two grade levels above normal--on the average. The school makes use of the right combination of materials, teaching techniques, and understanding of the child himself. Instead of encouraging the child to engage in experiences, Lamplighter provides a barn full of animals and a great deal of play area so that the child will meet with these experiences. Lamplighter centers not on one or two teaching techniques, but uses a myriad of techniques to deal with a myriad of individual differences in the children.

The Sullivan Pre-School Centers are a network of private preschools that serve primarily middle and upper-middle class white children. These preschools utilize programmed materials developed by Dr. Maurice Sullivan. These materials present simple problems that the child can solve and have the child working at something that will provide him with success. In the Sullivan preschools, socialization and reading are stressed in an atmosphere unlike the public kindergarten. "Current reading programs," says Sullivan, "make the child feel as if he doesn't have the intellectual equipment to learn to read because reading is portrayed as such a difficult task.

The Sullivan Reading Program is organized to take the student step by step through the sound-symbol system of

English. Basically the program is divided into three levels: readiness in language arts, readiness in reading, and reading itself. Readiness in language arts helps the child to develop preliminary skills that relate directly to reading, while the child is also introduced to the basic concepts of directions, spatial conception and color, and the alphabet. Reading readiness teaches the student to recognize printed letters and numbers, to associate these symbols with sounds, to combine these sound-symbols into words, and to decode symbols. Reading instruction continues the development of word recognition and discrimination. The programmed materials of the Sullivan preschools are delivered in brief doses to the children and are liberally intermixed with play activities to reinforce learning.

Programmed Reading makes written English something a child can handle. The child is introduced to a few letters and sounds at a time. Once the child has thoroughly mastered a particular sound associated with the letter, other sounds that are associated with that letter are introduced. Within this program, reinforcement is utilized a great deal. Traditionally, school children have grown up thinking that it is very important to be right all the time, and if the child is not right, he feels guilty and wants to escape the situation. But with the use of programmed materials, each child achieves success and is never made to feel inferior.

Besides the Sullivan Programmed Materials, Montessori manipulation materials, Scholastic paperbacks, songs, and games are used in the preschools. Each child is motivated to respond many times during activities, because in the Sullivan preschools learning is responding. The Sullivan preschools have approximately one teacher for every 10 students and report virtually no non-readers by grade three.

The philosophy of the Sullivan preschools views the learner as the most important element in any school setting. Three exposures receive emphasis in the setting: exposure to diverse activities logically developed in small sequential steps, a safe, comfortable, free environment in which the child has the opportunity to make decisions but in which none of the options can have a painful result to the child, and the parent involvement.

Leadership: The Administrator's Responsibility

To summarize this paper, the responsibility for implementing innovative preschool educational practices and bringing about effective educational change belongs to the school administrator. One possible alternative to bringing about effective educational change might be through preschool reading instruction. How, then, does the school administrator proceed in implementing change through preschool reading instruction? The following are among the logical steps he should take

Survey the Reading Needs of the Preschool Population. What are the major factors interfering with the reading readiness and later reading achievement of the preschool population? Examples of variables are: poor background of experiences, negative attitude toward reading, limited vocabulary, poor visual and auditory discrimination abilities, etc. To determine these factors, survey teachers, school records, and test the children with appropriate instruments.

Determine Resources. Determine what physical resources, monies, people, and alternatives are available to meet needs. Examples of resources include: interested teachers, parents, community groups, contingency funds, and Federal funds.

Consider the State of the Art on Needs. What does research on the topic reveal? What do authorities in the field suggest? Use consultants in the particular field and consult all available literature.

Consider Solutions. How are other education agencies approaching the problem? Examples are: traditional kindergarten, preschool readiness instruction, formal preschool reading instruction, etc.

Involve the Community. What community groups and/or individuals should be included in solving the problem? Examples are: interested parents, PTA, local business groups, and professional associations.

Derive Objectives. Determine what changes in reading behavior should occur as the result of the preschool reading program. Examples include: increased reading readiness, children reading at a particular level before entering school, increased reading achievement at later educational levels, and more positive attitudes toward reading.

Develop a Proposal. Write a formal proposal which describes all of the above elements. The proposal should also include an operational component and time schedule for all events associated with the program. Submit the proposal for approval.

Evaluate the Preschool Reading Program. The continuation and success of the preschool reading program should be determined by evaluation. For example, to what degree were program objectives achieved? Examples of sources for data collection are: pupils, teachers, and local community.

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APPENDIX A

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